INDUSTRIAL EQUIPMENT NEWS

MARCH - 1951
VOL. 19 • NO. 3

The Original IEN FOUNDED 1933

INDUSTRY'S MOST COMPLETE PRODUCT INFORMATION SERVICE

What's New IN EQUIPMENT, PARTS, MATERIALS

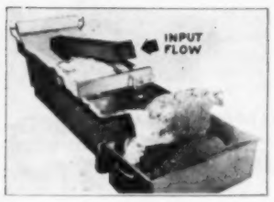
AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

Product Information for specifiers and buyers in all industries

BREVITY—Identify by IEN-2140 if you write the maker

FILTERING . . Conveyor type unit separates solids from coolant fluids

Source: DELPARK CORP.
51 Industrial Ave., Lebanon, Ind.



Wire mesh conveyor is assembled with a shallow metal tank in this new coolant filter, the conveyor reaching down into the tank from one side and back up on the other. It forms a pocket at about the center beneath the float of a control switch mounted on a bridge member extending across the tank. A roll of filtering paper, or cloth to meet specified requirements, mounts on the incoming end of the conveyor to lie on the wire mesh and to issue over the outgoing edge.

Contaminated coolant is delivered by means of a trough, or a pipe and spreader, to flow down over the filter sheet and form a pool under the switch float. The liquid moves through the sheet into the tank for recirculation. The solid materials collect in the form of sludge until the level rises sufficiently to lift the float and operate the switch. This closes the circuit to the conveyor drive motor and advances the conveyor and the paper with its accumulated material until the switch float is cleared. Then it stops for the next accumulation.

The advance movement dumps a portion of the filter paper with its load of previously-forwarded sludge which has had an opportunity to drain so the discarded material is reasonably dry. A tote box is placed beneath the conveyor at the discharge end to receive the sheet and the solid materials for suitable disposal or to reclaim valuable material.

Sizes range from about 14 to 54 in. in width of the tank by 44 in. to 26 ft. in overall conveyor length: The tank is 5 to 12 in. in depth. The conveyor discharge rises 7 to 16 in. above the top tank edge to clear a tote box.

BREVITY—Identify by IEN-2141 if you write the maker

COMPRESSOR . . Two-stage rotary rates 600 cfm. of free air at 100 pounds

Source: INGERSOLL-RAND CO.
746 Morris Ave., Phillipsburg, N. J.

Gyro-Flow 600 is a new two-stage oil-cooled rotary compressor that operates without the need for valves, pistons, rings, rods. It is direct connected to a General Motors Series-71 diesel engine. Assembly includes wheel mounting for portable application in a Mobil-Air unit that weighs 9,500 pounds. Air is discharged at temperatures under 200 deg. F. in normal operating conditions.

Operation is regulated by an Air-Glide capacity controller which combines variable-intake unloading of the compressor and control of the engine speed for delivery over the full range between zero and rated capacity. Pressure fluctuation over this range is within 10 pounds. The control action is stepless. The delivered air is free from entrained oil at the compressor outlet.

Starting is by depressing a push button. Ether is used for fast action in low temperatures. Both engine and compressor are protected by stack-type oil bath air filters, particularly for use in dusty atmospheres. The filters are accessibly located. Hinged side covers and a fold-up shutter for the radiator are standard. The chassis is spring mounted.

RED CROSS MONTH

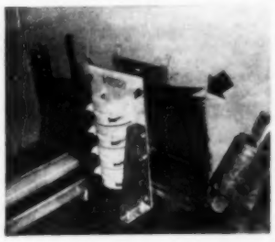
GIVE!

Expanded activities of the American Red Cross, over and above its regular work, include procurement of blood for armed forces and civil defense, training of some 20 million persons in first aid, recruiting and training women for home nursing and as nurses' aids. It needs your help, both for funds and for volunteer work, so it may continue to help others.

BREVITY—Identify by IEN-2142 if you write the maker

HANDLING . . Magnetic separator "floats" ferrous sheet for hand feed

Source: VERSON ALLSTEEL PRESS CO.
9325 S. Kenwood Ave., Chicago 19, Ill.



Ferrous sheets or strip to be fed to a machine, such as a press or shear, are piled into a stainless-steel rack in this new Magnetic Sheet Floater. On one side of the rack is an assembly of Alnico permanent magnets. These magnets set up a field in the sheets that causes them to repel each other so their ends will fan out and float with air space between them.

In this position a worker can grasp a single sheet for removal from the pile into the machine without any difficulty. Ferrous sheet blanks of regular or irregular shapes can be handled similarly. Each installation is made to meet specific requirements for sheets above 10 gage. A standard unit for 10-gage stock lists at $71.

BREVITY—Identify by IEN-2143 if you write the maker

WOOD WORKING . . Pneumatic saw reciprocates two balancing blades

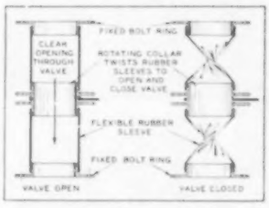
Source: WRIGHT POWER SAW & TOOL CORP.
290-94 Longbrook Ave., Stratford, Conn.

Twin blades operating side by side through a 4-in. stroke at 1,500 strokes per minute move in opposite directions to balance operation in this new portable pneumatic saw. The resulting action is essentially free from thrust and will not "kick" on completion of a cut. The blades measure 21 in. in length and are toothed in one design for cross-cutting, ripping or notching. Sawdust is moved away from the operator and will not clog or bind the blades.

BREVITY—Identify by IEN-2144 if you write the maker

VALVE . . Rubber sleeve assembly handles dry and lump materials from bin

Source: STEPHENS-ADAMSON MFG. CO.
231 Ridgeway, Aurora, Ill.



Cylindrical steel collar is mounted to rotate in the center of this new Twistite bin valve. It is fitted with rubber sleeves reaching upward and downward to top and bottom stationary flange plates, one to secure at the bottom of the bin or hopper and the other to connect to a delivery line. A cable is wrapped around the collar and leads out through a ratchet lock.

Pulling on the cable rotates the collar, twists the two sleeves, causing them to wrap tightly around the material to stop the flow. Releasing the cable permits the elastic rubber to resume its cylindrical shape for free flow. The valve is available in a nominal 6-in. size to handle lumps as large as 2½ inch. It measures 20 in. in overall height. Its top and bottom flanges are 10 in. in diameter. Cable pull of 30 lb. through 9 in. operates the valve between open and closed position. Other sizes are available to specification.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

WHAT DO YOU NEED?

READER SERVICE FORM . . Look between pages 16 and 17 or 96 and 97 and "lift" the form you find there. Keep it beside you as you look through the pages. Note on it the numbers of the products on which you want further information. Then either mail it to us, so we can forward your requests to the manufacturers, or use it as your guide to write direct.

From a Purchasing Agent

"We use Industrial Equipment News as a source of information covering the entire product industry as it seems to have a wider horizon than most of the publications of this sort. Our industry, Petroleum, is rather specialized and it is very difficult for us to obtain from our normal sources of information complete data regarding new developments in other fields unless they are allied. We find Industrial Equipment News exceptionally valuable in this respect."

Departments

READER SERVICE FORM Pages 16 to 17 and 96 to 97
To assist you in securing the information you want

INDEX Page 110
Products and services listed by names and by functions

SUPERGALUBRIOUS Page 4
Your letters and IEN's product information service

NEWS NOTES Page 24
Reviews of unusually helpful literature and service

NEW LITERATURE Page 74
Condensed reviews of current manufacturers' catalogs

"I WISH I HAD" Page 112
Requests we cannot answer, printed in the hope you can

Our selections in this issue

COUNTING Page 58
Electronic instrument for frequency and time measurements

DRAFTING Page 60
Flat-lead pencil draws uniform width line, no sharpening

DRIVE Page 10
Combination clutch and brake, pneumatic operation

DRIVE Page 35
Variable-speed dc. motor and control for 3-phase input

FASTENING Page 91
Ball-lock pin for pivot connections, quickly removable

HEATING Page 72
Electric oven particularly for safe laboratory use

JIG BORING Page 57
Precision machines, electric gaging, ball-bearing spindles

LATHE Page 101
Automatic machine for clean fast bar-stock cut-off

METER Page 21
Variable-area instrument reads flow around orifice

PACKAGING Page 46
Predetermining meter measures liquids into a container

PHOTOGRAPHING Page 83
Motion camera to record separate simultaneous events

PROCUREMENT Page 82
"Selling to the Government" titles 16 page Booklet

W. E. Frish, V. Pres. & Editor
F. Morse Smith, V. Pres. in Charge

THOMAS PUBLISHING COMPANY
461 - 8th Ave., New York 1, N.Y.—LOngacre 3-1546

FILL IN AND SEND ALONG TO OTHERS INTERESTED IN PRODUCT INFORMATION

- ☐ Plant Operating Mr. _____
- ☐ Production Mr. _____
- ☐ Engineering Mr. _____
- ☐ Product Design Mr. _____
- ☐ Purchasing Mr. _____
- ☐ _____

BREVITY—Identify by IEN - 2145 if you write the maker

NEW BALL BEARING CATALOG READY

● Selection of bearing type and size for various conditions of load and speed is considerably simplified and illustrated by examples.

Load rating tables now give both radial and thrust capacities. Speeds now arranged to include those for synchronous motors.

Address Department I, New Departure Division, General Motors Corporation, Bristol, Connecticut.

NEW DEPARTURE BALL BEARINGS

BREVITY—Identify by IEN - 2146 if you write the maker

FREE! 32-PAGE HANDBOOK

SHOWS HOW TO STOP CONDENSATION DRIP

NoDrip

Stops Drip from:
- ✓ Cold water pipes
- ✓ Water filter tanks
- ✓ Metal or concrete ceilings
- ✓ Basement walls
- ✓ Condensers
- ✓ Air Ducts
- ✓ Blower pipes
- ✓ Dust Collectors
- ✓ Crystallizers

Learn how you can control condensation drip from pipes, tanks, ceilings—from metal, wood or masonry surfaces.

LOW COST — EASY TO APPLY

Anyone can apply NoDrip, the triple-duty insulation type coating. Brush it on or spray it on. Use it on pipes or equipment where temperature differences cause condensation. Save money by preventing rust and corrosion. Deaden sound, decrease vibration on metal ducts or pipes.

HANDBOOK SHOWS HOW

Send today for your copy of the NoDrip HANDBOOK which tells what this plastic-cork material can do for you. It's the modern solution to condensation drip problems.

Send for your Free Handbook Now!

J. W. MORTELL CO.

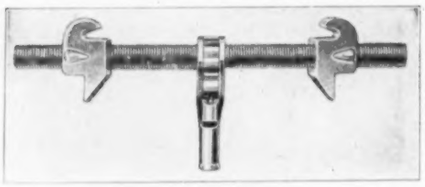
Technical Coatings Since 1895

Dept. IE, Kankakee, Ill.

BREVITY—Identify by IEN - 2147 if you write the maker

A NEWS ADVERTISEMENT BY
THE DUFF-NORTON MANUFACTURING COMPANY

JACKS . . . Screw type for wide range of pushing and pulling applications



A powerful screw-type jack with ratchet lever sockets for pushing and pulling operations has been developed by Duff-Norton. Widely used in erecting bridges, docks, tanks, piling and other industrial structures, this jack offers the most practical method of pushing apart or pulling together steel plates, sheets and beams.

Duff-Norton Push and Pull Jack also provides economical service in straightening sides and ends of steel freight cars, as well as in spreading or drawing in bent or split center sills. Chains, hooks or pipe sleeves used in conjunction with the jack greatly increase its range of application.

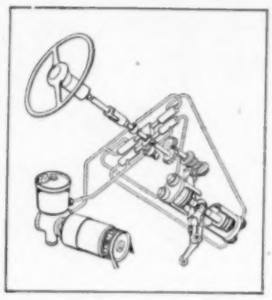
Available in standard lengths of 24", 28" and 38", this jack also can be furnished in greater lengths. Capacities range from 10 to 15 tons. For easy, positive operation, the steel screw, nuts and ratchet wheel all are machine cut.

THE DUFF-NORTON MANUFACTURING CO.
Pittsburgh 30, Pa.

BREVITY—Identify by IEN - 2148 if you write the maker

TRUCKS . . Power steering mechanism for quick response, operator protection

Source: GEMMER MFG. CO.
6402 Mount Elliott Ave., Detroit 11, Mich.



Axial movement through a few thousandths of an inch in the lower section of the two-part steering column in this new mechanism actuates valves. They apply hydraulic pressure in opposed cylinders against a roller-equipped arm on the steering shaft in a motor vehicle to turn the wheels in one direction or the other. This axial movement accompanies turning of the steering wheel through only a small arc for quick response.

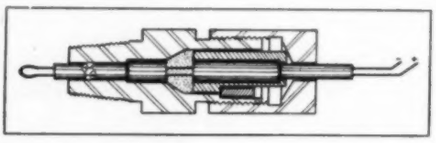
The power is sufficient to turn the wheels whether the vehicle is standing or moving and permits using a small ratio between the steering worm and the follower roller. The front wheels will remain locked in any position until the steering wheel is turned so most of the danger is removed from a blow-out. The design permits steering by hand if the hydraulic equipment is not operating.

Two major assemblies include the steering mechanism with the power cylinders and the valve in one part, and the hydraulic pump and oil reservoir, which mounts on the vehicle generator shaft or other suitable position for drive by the truck or vehicle engine.

BREVITY—Identify by IEN - 2149 if you write the maker

THERMOCOUPLE . . Gland assembly to mount bare thermocouple wires

Source: CONAX SALES CO.
4513-17 Main St., Buffalo 21, N. Y.



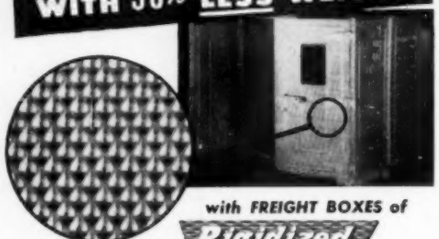
Insulators are applied on bare thermocouple wires back of the end loop for insertion into the body of this new gland assembly. Dry powdered talc is poured back of the nose end and is backed by a follower and a key that prevents the follower from turning. A stainless-steel cap is threaded into place and tightened down to compress the talc and tighten the wire assembly in insulated position. An old wire can be replaced quickly.

The assembly is suited for use in temperatures between minus 100 deg. and plus 1,600 deg. F. It will withstand pressure to 4,000 lb. and is designed particularly for temperature measurement and control of gases, vapors and liquids, enclosed vessels under positive or negative pressure. Units in the line will take standard 20 and 14-gage thermocouple wires and can be applied with terminal blocks or conduit.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2150 if you write the maker

SHIPPING COSTS CUT.... WITH 50% LESS WEIGHT



Half size photograph of RIGIDIZED METALS Pattern 6-WL

with FREIGHT BOXES of Rigidized Metals

DESIGN STRENGTHENED

Missouri Pacific Railroad freight containers of RIGIDIZED Metals cut transportation costs, reduce weight over 50%. RIGIDIZED METALS conserves critical material, lessens damage claims, increases payloads. RIGIDIZED METALS give you added strength, longer equipment life, may be adapted to limitless product applications. Reduce dead weight, cut costs. Investigate RIGIDIZED METALS.

Send for RIGIDIZED METALS IDEA HANDBOOK TODAY

Rigidized Metals Corporation

664 OHIO STREET, BUFFALO, N. Y.

BREVITY—Identify by IEN - 2151 if you write the maker

SEE HOW MUCH MORE YOU GET!

IN THE Atlas 15" DRILL PRESS

"FLOATING DRIVE." Pulley and exclusive steel drive sleeve "float" on 2 sealed-for-life ball bearings.

PRECISION GROUND SPINDLE. Floats free from quill on two more sealed-for-life bearings—widely spaced for greater accuracy.

DEPTH CONTROL STOP. Vernier adjustment permits fast exact setting. Neoprene quill bumper ends wearing jar of drill return.

EXTRA HEAVY HEAD, with wider spaced column bearings for greater rigidity and accuracy.

Those are *but a few* of the Atlas features. It's available in bench or floor type with full-tilting table — high or slo speed models — Jacobs chuck or Nos. 1 or 2 Morse taper spindles. Ask your jobber for full particulars and write today for catalog.

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ATLAS PRESS COMPANY
891 N. Pitcher St., Kalamazoo, Mich.

MATCHED PRECISION TOOLS FOR WOODWORKING AND METALWORKING

BREVITY—Identify by IEN - 2152 if you write the maker

DEADLY TO FIRE!

Fire? Just pull the trigger of a Kidde CO_2 portable extinguisher...and it's out before it gets a chance to spread. Write for free literature.

Walter Kidde & Company, Inc.
336 Main St., Belleville 9, N. J.

Kidde

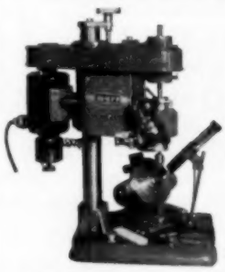
BREVITY—Identify by IEN - 2153 if you write the maker

this 28-page BULLETIN full of useful metal joining information

Requests for this new bulletin have been pouring in. And scores of letters have come in from design and production engineers praising the clear and complete way in which it presents the facts about low-temperature silver alloy brazing. Many of them say the information in the bulletin —particularly on joint design and on fast brazing production methods—has enabled them to speed up and improve some of their own metal joining work. Don't miss out—write for a free copy of Bulletin 20 today.

HANDY & HARMAN 82 Fulton St., New York 38, N. Y.

BREVITY—Identify by IEN - 2154 If you write the maker



Taylor

HI-EFF

PRECISION DRILLING MACHINES

Always Look For The FACTS THAT COUNT!

• Here are seven significant facts . . . They represent "HI-EFF" quality features for sensitive, precision drilling. Write for Bulletin 761.

1. Spindle and chuck run-out .0001".
2. Vaporized lubrication of bearings.
3. Spindle supported by 4 select, precision bearings—other moving parts precisely ground and lapped.
4. Solid column for maximum rigidity.
5. Variable speed—800 to 40,000 R.P.M.
6. Radial positioning of drill head.
7. Counter-balanced spindle affords sensitive, feather-touch feed.

Dynamometers • Static Balancers • Precision Drilling Machines

TAYLOR DYNAMOMETER & MACHINE CO.

528 N. WEST HIGHLAND AVE. • MILWAUKEE 3, WIS.

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SECURITYFLEX

portable cord

Tough, dependable — resistant to oil, water, abrasion, age, ozone—SECURITYFLEX* Portable Cord is a reliable partner for any electrical appliance. So rugged it's used on mine drills.

Resists kinking. Flexes indefinitely. Don't risk your product's performance by using poor cord. SECURITYFLEX is made by Anaconda Wire & Cable Company, 25 Broadway, New York 4, New York.

the right cable for the job

ANACONDA® Wire and Cable

BREVITY—Identify by IEN - 2156 If you write the maker

Browning

FLEXIBLE COUPLINGS WITH SPLIT TAPER COMPRESSION BUSHINGS

(1) Bushed type—eliminates expensive reboring—wide bore selection
(2) Completely machined from solid steel or malleable castings
(3) Compact-maximum strength
(4) Neoprene insert-added strength, resiliency, shock absorbing, oilproof, greaseproof, heat resistant
(5) Easy to mount, easy to remove, positive locking clamp fit, 1/6th to 40 H.P. range—available from stock.

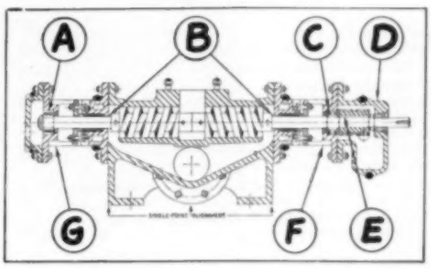
Write for free Literature and the name of the *Browning Gripbelt* distributor near you

BROWNING MANUFACTURING COMPANY
INCORPORATED
1950 BROWNING DRIVE MAYSVILLE, KENTUCKY

BREVITY—Identify by IEN - 2157 If you write the maker

PUMP . . Balanced screw design for non-lubricating liquids, to 700 gpm.

Source: SIER-BATH GEAR & PUMP CO.
9250 Hudson Blvd., North Bergen, N. J.



Parallel shafts carrying double screws for balanced pumping action in this new pump are mounted in combination radial and thrust bearings, as at A, to eliminate need for thrust washers at point marked B. The shafts are carried in roller bearings at C and are timed for correct meshing rotation by gears in the housing at D. The gears themselves, at E, are precision cut so the screws will mesh in friction-free action to pump the liquid.

The front bracket F and the rear bracket G provide mounting for the bearings and the timing gears that will move with the shaft on changes in temperature so alignment will not be lost under varying service conditions. The pump can be direct connected for speed to 1,800 rpm.

It is available in horizontal or vertical construction, in corrosion resistant alloys, with steam jacketed body, special stuffing boxes and bearings for high temperature work. Hopper-type bodies can be supplied to handle liquids of very high viscosity when specified.

BREVITY—Identify by IEN - 2158 If you write the maker

ALLOY . . Cobalt-base material for equipment in high temperature duty

Source: HAYNES STELLITE DIVISION
723-27 S. Lindsay St., Kokomo, Ind.

Revised booklet is available

No. 25, wrought, and **No. 36**, investment-cast, are two new cobalt-base alloys in the company's line of cobalt-base, nickel-base and iron-base alloys for high-temperature services.

No. 25 features excellent mechanical properties at temperatures to 1,800 deg. F. in annealed condition without subsequent aging. It can be fabricated without difficulty due to its average room temperature ductility of 55 per cent.

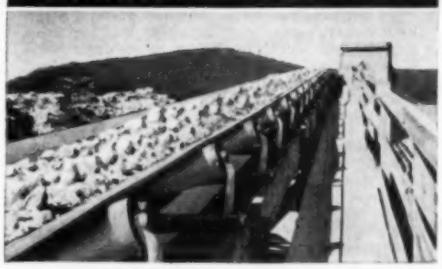
No. 36 is a comparable material from which parts are produced by investment casting. It features creep and stress-rupture properties together with resistance to oxidizing and reducing atmospheres in temperatures to 2,100 deg. F.

Booklet, 96 pages, "Haynes Alloys for High Temperature Service" presents technical data on ten alloys to meet requirements for service at elevated temperatures. A section on each alloy gives a general description of the material with recommended uses, chemical compositions, physical and mechanical properties in tabular and graphic form. Nine pages of graphs compare the mechanical properties of the various alloys. Age-hardening data and fabrication procedures are included in the information.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 30

BREVITY—Identify by IEN - 2159 If you write the maker

BELTING BUILT FOR THE TOUGH JOBS



HEWITT-ROBINS Belting Lasts Longer . . . Costs Less!

When trouble comes by the ton, the easiest, most dependable, most economical way to move it is on a Hewitt-Robins conveyor belt.

Today engineers the world over instinctively specify Maltese Cross® where the going is really tough, Ajax® for general service, and Conservo® for light work and portable conveyors.

For Hewitt Rubber belting is protected against moisture, oils, flexing, and ply-separation. Maximum strength plus flexibility are assured through extra-tough rubber covers, heavily textile-reinforced.

For details on belting—or for entire belt conveyor systems—write Hewitt Rubber Division, Buffalo 5, N. Y.

HEWITT-ROBINS CONVEYOR BELTING

HEWITT-ROBINS HR INCORPORATED

BREVITY—Identify by IEN - 2160 If you write the maker

LUBRICATION ECONOMY

"LUBRIPLATE improves Machine Operation"

The Package Machinery Company of Springfield Mass. writes: "To insure the use of Lubriplate Lubricants for re-lubrication of our machines in use, we place tags on them before shipment; thus the purchasers of those machines know the Lubriplate product to use for each application."

1. LUBRIPLATE reduces friction and wear
2. LUBRIPLATE prevents rust and corrosion
3. LUBRIPLATE is economical to use

Write today for case histories of savings made through the use of LUBRIPLATE in your industry.

LUBRIPLATE DIVISION
Fiske Brothers Refining Co.
Newark 3, N. J. Toledo 3, Ohio

The Different LUBRICANT!

DEALERS EVERYWHERE, consult your Classified Telephone Book

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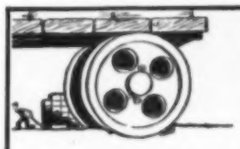

IN A Rut?

DON'T LET WORN FLOORS SLOW UP PRODUCTION!

A *real* heavy-duty floor must be concrete—*good* concrete. 'Incor' 24-Hour Cement assures stronger, longer-lasting, heavy-duty concrete floors—by curing THOROUGHLY in 24 hours, instead of a week or more.

Don't let worn-out floors slow production—rebuild floors over a week-end with 'Incor'*—no plant tie-up—no time-loss!

Write for booklet, "Heavy-Duty Floors"—address Lone Star Cement Corporation, 100 Park Avenue, New York 17.

*Reg. U.S. Pat. Off.

LONE STAR CEMENT CORPORATION

Offices: Albany • Bethlehem, Pa. • Birmingham • Boston • Chicago • Dallas • Houston Indianapolis • Jackson, Miss. • Kansas City, Mo. • New Orleans • New York Norfolk • Philadelphia • Richmond • Roanoke • St. Louis • Washington, D. C.

BREVITY—Identify by IEN - 2162 If you write the maker

The Practical Solution to Your Small Bearing Problems...

ACTUAL SIZE

NORMA-HOFFMANN Small BEARINGS...

When designs call for *small* bearings, *specify* and *use* Norma-Hoffmann Small Bearings. These small precision bearings are engineered to give efficient, trouble-free service for years on end. They are extra quiet in operation . . . require little if any maintenance . . . improve the performance of the product.

Write for catalog describing these *small* bearings as well as other Norma-Hoffmann Bearings. They are available in a wide range of types and sizes from ⅛" to 22⅛" bore.

NORMA-HOFFMANN Precision BEARINGS
BALL • ROLLER • THRUST

NORMA-HOFFMANN BEARINGS CORPORATION
STAMFORD, CONN.

BREVITY—Identify by IEN - 2163 if you write the maker

WHAT ABOUT STRESS RAISERS?
This book gives the answers..

How to avoid the localized stresses which start failure is a basic problem of design. This 72 page booklet analyzes many good and bad features of design. It also deals with problems of steel selection and treatment from the viewpoint of the design engineer—instead of the metallurgist.

Write for "3 Keys to Satisfaction"—it is free.

This booklet sent to you FREE

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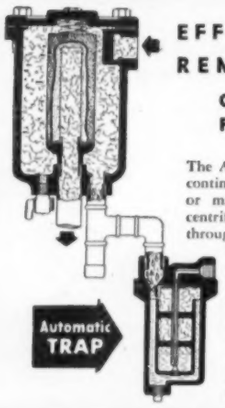
500 Fifth Avenue · New York City

F21

BREVITY—Identify by IEN - 2164 if you write the maker

Poro-Stone Filtration
FOR COMPRESSED AIR



EFFICIENTLY REMOVES
OIL, WATER
PIPE SCALE

The Adams *Poro-Stone* Filter gives continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operation. Write for complete data—Bulletin 176.

R. P. ADAMS CO., INC.
219 E. Park Dr., Buffalo 17, N. Y.

ADAMS *Poro-Stone* AIR FILTER

BREVITY—Identify by IEN - 2165 if you write the maker

CRANE QUALITY FITTINGS

FOR
EVERY PIPING SYSTEM

Malleable Iron Screwed Fittings—Made in a wide variety of types; in Banded or Plain Patterns; in a full range of straight and reducing sizes. All openings accurately threaded to gauge; slightly chamfered to permit easy entrance of pipe. Available for steam working pressures up to 300 pounds; for water, oil, or gas up to 2000 pounds.

Cast Iron Fittings—Screwed or flanged. Screwed fittings have chamfered openings for easy joining to pipe. Unusually long list of reducing sizes for elbows, tees, crosses, and reducers. In addition to regular 125-pound screwed and flanged fittings, Crane line includes Sprinkler Type, Short Pattern, and Drainage Fittings. For steam working pressures up to 250 pounds; for water, oil, or gas up to 400 pounds.

SEE YOUR NO. 49 CRANE CATALOG

CRANE CO., 836 S. Michigan, Chicago 5
Branches and Wholesalers Serving All Industrial Areas

EQUIPMENT FOR EVERY PIPING SYSTEM

CRANE

VALVES • FITTINGS • PIPE • PLUMBING • HEATING

INDUSTRIAL EQUIPMENT NEWS

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What's New · EQUIPMENT · PARTS · MATERIALS

Vol. 19 MARCH, 1951 No. 3

Supergalubrious

A reader coined that word for us to express his opinion of IEN's product information service in answer to our "year-end" how-are-we doing letter. We cannot think of a better definition for our own feelings as we look over the young mountain of letters you have returned to us with your friendly comments and suggestions. We are indeed grateful.

We want to comment here in our mutual interests, as we did last year, on several points you have brought up so you may see our suggested answers.

The subjects on the front page and in the upper two-thirds of each following center column represent products or services that are new or improved as stated in each description. They are published without charge to the manufacturer as our editorial service to you. Similarly we will publish news of your own new products for industrial use, new in the past three or four months prior to sending the news to us, and actually available.

The material included in the New Literature and News Notes columns is screened for newness and also for constructive addition to your reference files. Each item is written with an actual copy at hand.

We have tried to include sufficient basic information in each editorial item so you, as experienced men, can judge potential value for further investigation. We are continuing to work on the problem of securing prices we can quote. We do agree they are essential.

The side columns on each inner page and the units at the center bottom contain information by the manufacturers. They have purchased this space to keep you informed on their current products. We advise with the manufacturers but do not direct their choice of subject or manner in which the information is presented.

We will name sources for information on any plant facility, service or product component that you want to know about and do not find in your current issue. We will make suggestions to help answer specific plant and product problems on receipt of your request. We will publish in the "I Wish I Had" department any plant or product questions that we are unable to answer in order to invite help from all of our 67,500 readers.

We will forward your inquiries to the manufacturers and will mark them "literature only" or "send salesman" on those you so indicate. We do, however, suggest that you address the manufacturers direct when you have specific questions and want the answers.

We want word from you when you see an editorial description on a product you believe to be old in our definition. Particularly we want the names of makers and the products involved in inquiries you have sent through us, or direct, without having received the information you asked for. We want to investigate each such case to get you the data and prevent recurrence of the difficulty.

Most of you are heading into difficult conditions as we get further into defense production in the days ahead. We hope you will give us the opportunity to help in any angle of our specialty product information. We shall do our best so we can come to you at the end of the year to ask our annual question and you will answer, "supergalubrious."

W. E. Irish.

BREVITY—Identify by IEN - 2166 if you write the maker

Dependable . . . Efficient

DUST CONTROL
with DUCON FILTERS
for every purpose

Multi-Tube Cloth Collector

UNIFLOW BACKWASH COLLECTOR
An automatic continuous filter comprising a multiple of filter tubes.

FIBRE DUST FILTER
For collection of fibrous materials in installations where small floor space and large capacity are essential.

UNIT TYPE
Embodies multiple numbers of cloth filter bags to provide maximum filter area to air flow. Compact, efficient.

MULTI-TUBE TYPE
For general-purpose dust collecting.

Write for Literature F-1.

The DUCON Co.
MINEOLA, N. Y.

BREVITY—Identify by IEN - 2167 if you write the maker

SAVE TIME... STORAGE SPACE ...AND AVOID SPILLAGE

with TELLEVEL
AUTOMATIC BIN-LEVEL CONTROL

Let TELLEVELS watch your bin-level for you . . . Avoid empty or overflowing storage bins.

Mount a TELLEVEL near the top and another near the bottom of your storage bin . . As the material-level falls or rises, the light pendant is pushed aside . . . Automatically *starts or stops* conveyor, elevator or pump . . . Can be furnished for bulk materials or liquids.

Check possible uses. Write now for Bulletin No. 440.

STEPHENS-ADAMSON MFG. CO.
Tellevel-Bin Level Controls · Car Loaders · Car Pullers · Winches · Saco Speed Reducers · SealMaster Ball Bearings
231 RIDGEWAY AVE., AURORA, ILLINOIS

BREVITY—Identify by IEN - 2168 if you write the maker

6 REASONS why American industry specifies WIGGINS

★ Craftsmanship
★ Integrity
★ Uniformity
★ Low pressure drop
★ Leak proof seal
★ Engineering Service

Over many years, Inst-O-Matic has acquired a value for above its mere mechanical qualities, a value proved by its acceptance throughout industry and in all branches of the armed services.

EQUIPMENT MANUFACTURERS
Users' experiences prove conclusively that this design stands up longer under extreme pressure and vibration, and rarely requires replacement. Inquire today.

Basic Sizes: ¼", ½", ¾"; intermediate sizes where needed. Unconditionally guaranteed leak proof from zero to maximum recommended pressure.

Wiggins
INST-O-MATIC COUPLINGS

For proof of performance, write for name of nearest representative to E. B. WIGGINS OIL TOOL CO., INC., 3424 E. Olympic Blvd., Los Angeles 23, Calif.

BREVITY—Identify by IEN - 2169 If you write the maker

NOW ONE UNIVERSAL JOINT For HIGH-load, HIGH-static torque Drives

Highest grade, heat-treated alloy steel for greater strength.

Ground to infinite degree of accuracy. No binding, backlash or inplay of pins. Concentricity guaranteed within .0005. Exceed Armed Forces rigid requirements.

14 SIZES — Bores 3/16" to 2". Overall length 1¾" to 10⅝".

Write for fully descriptive literature.

LOVEJOY FLEXIBLE COUPLING CO.

5014 W. Lake Street Chicago 44, Illinois

Mfrs. of Lovejoy Flexible Couplings and Variable Speed Controls

BREVITY—Identify by IEN - 2170 If you write the maker

Here's WHY!

FOR LASTING SERVICE AND LOW MAINTENANCE SPECIFY

- Pillow Blocks
- Take-up Units
- Flange Units
- Cartridge Units
- Flange Cartridge Units

SEALMASTER BALL BEARING UNITS

Only **SEALMASTERS combine these features:**

Permanent Seal—Patented centrifugal seals exclude dirt and retain lubricant.

Self-Aligning—Misalignment of shaft in any direction cannot distort the seals.

No Housing Wear—Patented locking pin prevents rotation of outer race—positions unit for relubrication.

Pre-Lubricated—Each SealMaster is shipped with lubricant sealed in—ready for use.

Write today for a copy of Catalog No. 845

BEARING DIVISION

STEPHEN S-ADAMSON

RIDGEWAY AVENUE, AURORA, ILLINOIS MFG. CO. LOS ANGELES, CALIF. • BELLEVILLE, ONT.

Factory Representatives and Dealers in All Principal Cities

BREVITY—Identify by IEN - 2171 If you write the maker

ENDS ALL SLIPPING HAZARDS in a County of San Diego Hospital!

PABCO GRIP-TREAD MASTIPAVE

Non-Slip—Wet or Dry

AMERICA'S No. 1 LOW COST LONG-LIFE FLOOR COVERING

"Before we installed Pabco Grip-Tread Mastipave" says D. R. Sloan, Superintendent, Edgemoor Farm, County of San Diego, California, "we had considerable trouble with fractures due to patients slipping on concrete floors. Mastipave has entirely eliminated these accidents. For this feature alone, Mastipave has paid for itself.

"The nurses and attendants speak very highly about Grip-Tread Mastipave, especially its ease and comfort underfoot. Low maintenance cost is a big factor, as once Mastipave floors are waxed, very little attention need be given them."

EVERY BUILDING NEEDS PABCO MASTIPAVE

For 25 years, the Nation's blue chip industries, public carriers, hospitals, public school systems have demonstrated that Pabco Mastipave costs little, looks good, wears even better! Grip-Tread is sold in roll goods only—regular Mastipave is available in roll goods and tiles.

PABCO

SEND NOW FOR THE FULL STORY OF MASTIPAVE!

(Mail to Dept. E, nearest office)

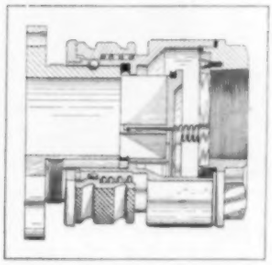
PABCO PRODUCTS, INC.

New York 16 Chicago 54 San Francisco 19

BREVITY—Identify by IEN - 2172 If you write the maker

HOSE FITTING . . Quick acting coupler plain or with internal shut-off valve

Source: ROBB MFG. CO.
1307 Washington Blvd., Pittsburgh 6, Pa.



New design of the company's Quick-Seal hose coupling is available with an internal valve on the pressure side that closes as soon as the coupling is opened and opens upon inserting the coupler nipple. This new unit, in a 6-in. size, has been tested on fuel-oil pressure to 300 lb. with flow at 1,200 gpm. to show pressure drop through the coupling assembly of about 5 per cent. Overall dimensions are about 12-in. in length by 9-in. in outside diameter. Weight in steel is 90 pounds. List price is about $200.

The assembly is made in two principal parts including the nipple to the left and the body with its spring-backed ball-retaining sleeve to the right. Inside the body is a neoprene packing ring against which the nipple presses when it is inserted. This ring has lips facing inward to provide a sealing action in step with pressure applied in the flow passage. Drawing back the retaining sleeve permits the stainless-steel retaining balls to move outward and thus release the nipple for quick disconnection. The coupling is locked in operating position when the sleeve is forward to hold the balls in place. The line includes sizes from ¼ in. up, subject to specification in desired metal.

BREVITY—Identify by IEN - 2173 If you write the maker

REFRACTORY . . Fused zirconia made in molded shapes, to 4,600 deg. F.

Source: NORTON CO.
36 New Bond St., Worcester 6, Mass.

Bricks for furnace linings, setter plates to fire titanates, heating elements for electric furnaces, containers and conveyors for molten steel, thermal insulation are representative applications for the company's new Fused Stabilized Zirconia. The material is a poor conductor of electricity at low temperature but an excellent one when subjected to high heat. It is a low conductor of heat and so acts as thermal insulation.

The company has developed and patented a process to make the material directly from ores and now can produce a brick of the material in standard dimensions at a cost of $9.43 including materials, manufacture, overhead and profit. One such brick, measuring 9 by 4½ by 2½ in., weighs 16 pounds or about twice the weight of a fire-clay brick.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

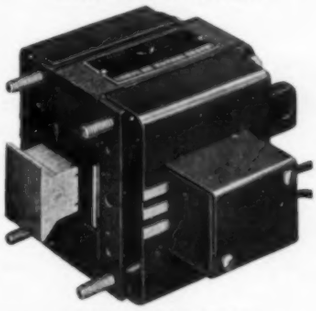
BREVITY—Identify by IEN - 2174 If you write the maker

TROMBETTA SOLENOID CORP.

MILWAUKEE WISCONSIN U.S.A.

FOREMOST SOLENOID MANUFACTURERS IN THE WORLD

CAN FURNISH SOLENOIDS FOR ANY APPLICATION CONCEIVABLE



F-326 PULL TYPE SOLENOID

10 lbs. at 85%; 14 lbs. at 100% voltage and 1½" stroke.

THE F-300 LINE OF SOLENOIDS IS THE RESULT OF 26 YEARS OF CONTINUOUS DEVELOPMENT, IMPROVEMENT AND EXPERIENCE.

BREVITY—Identify by IEN - 2175 If you write the maker

For AIR DUCTS and Recirculating OVENS

Needing Temperatures From 400° F TO 1,000° F

CHROMALOX TYPE TDH Heavy-Duty *Electric* HEATERS

Quickly and easily installed CHROMALOX Type-TDH Heaters give efficient, dependable heat for oven drying, heat treating, annealing ovens, air ducts and similar applications. Operating temperatures up to 1000° F are easily achieved and accurately maintained by thermostats. Standard units in 6 Kw to 60 Kw ratings. An Application Engineer will show you how these and other CHROMALOX Heaters give you year round service with increased efficiency at less cost. Write today for details.

IF YOU USE HEAT

Get this Useful Catalog

It's loaded with information on many of the 15,000 types, sizes and ratings of Chromalox Heating Units and Equipment.

EDWIN L. WIEGAND CO., 7505 THOMAS BLVD., PITTSBURGH 8, PA.

See *Chromalox Immersion Heaters Advertisement*, Page 11

CHROMALOX

ELECTRIC HEAT FOR MODERN INDUSTRY

BREVITY—Identify by IEN - 2176 If you write the maker

Click! THEY'RE INSTALLED

. . . AND JUST AS EASY TO REMOVE

A push and a twist on any R-B* interchangeable punch or die and it's securely locked and aligned, both vertically and radially. This easy installation, and easy removal feature cuts press "down time" for replacements to a minimum. No die disassembly is necessary.

R-B punches and dies save time and money in die building, too, because they are easily and accurately assembled in die construction. They are made from selected steels, with hardness controlled, and are finished to very close tolerances to insure uniformity and interchangeability.

*Richard Brothers

Get the whole story in this 48-page Free Catalog

ALLIED PRODUCTS CORPORATION
RICHARD BROTHERS DIVISION

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Also Produced in Allied's Four Plants . . . HARDENED AND PRECISION GROUND PARTS • STANDARD CAP SCREWS • SPECIAL COLD FORGED PARTS • SHEET METAL DIES • ALLITE DIES CAST OF ZINC ALLOY • JIGS • FIXTURES •

BREVITY—Identify by IEN - 2177 If you write the maker

TEXROPE Drives for Speed Control

VARI-PITCH SPEED CHANGER provides up to 3.75 to 1 speed range.

VARI-PITCH SHEAVES for A-B, B, C, D, and E belts — speed variation 15% to 25% per sheave.

WIDE RANGE VARI-PITCH SHEAVES for Q or R wide belts provide up to 2 to 1 speed range.

Get LOW COST Speed Control

THERE'S A TYPE or size *Texrope* adjustable speed drive to fit any requirement. Whether you need to change speeds rarely or frequently — when the machine is shut down, or when it's running — whether you're using one horsepower or 50, Allis-Chalmers can supply you.

In addition, Allis-Chalmers offers you more than the drive itself. A-C offers the extra engineering skill that naturally results from having more industrial V-belt installations than any other manufacturer.

Get section 20P50 for complete engineering information on *Vari-Pitch* sheaves from your A-C Authorized Dealer or Sales Office, or write Allis-Chalmers, Milwaukee 1, Wis.

Texrope and Vari-Pitch are Allis-Chalmers trademarks.

ALLIS-CHALMERS A-C A-3314

BREVITY—Identify by IEN - 2178 if you write the maker

KEEP THINGS *MOVING* with a

Handles the jobs that are too "tough" for powered belt units. Undamaged by sharp corners or rough edged work. Supplies dependable power in gravity lines.

Work can be slowed or held without stopping conveyor.

·METZGAR "LIVE ROLLER" POWER UNIT · 4 STANDARD SIZES · ADJUSTABLE HEIGHT

STANDARD WIDTHS 11½"; 15"; 18"; 24"

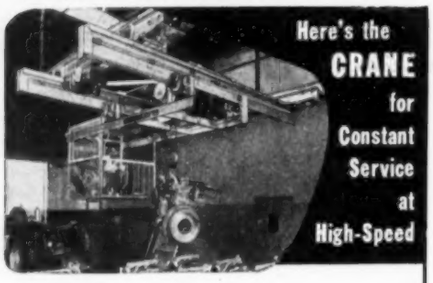
ALL STEEL BEARING SURFACE

PERMANENT OR PORTABLE BASE

For Full Specifications and Price write for Folder No. 1249

METZGAR CO.
417 Douglas N. W.
GRAND RAPIDS 4, MICH.

BREVITY—Identify by IEN - 2179 if you write the maker



Here's the CRANE for Constant Service at High-Speed

If your handling operations must be "on the go all the time and fast, too", then investigate this American MonoRail Crane. Coupled with constant service at high speed, it offers the advantages of easy movement, rugged construction, low-cost operation and quick installation.

An American MonoRail engineer will gladly give you all the details, or write us about the American MonoRail Constant-Service High-Speed Crane.

THE AMERICAN MONORAIL COMPANY
13111 Athens Avenue • Cleveland 7, Ohio

BREVITY—Identify by IEN - 2180 if you write the maker

ALL INFORMATION, METHODS, AND IDEAS NEEDED TO PRODUCE *BETTER TOOLS AND DIES*

Practical Data on Popular Analyses of Tool Steels, their Selection, Heat Treatment, and Use

in the Revised, Enlarged SIXTEENTH PRINTING of this

TOOL and DIE STEEL HANDBOOK

By Palmer and Luerssen

Here's the BOOK OF ANSWERS for every man responsible for tools and dies. Shows you how to increase your company's production from present equipment—how to reduce toolmaking trial and error, conserve tool steel, avoid die troubles, simplify heat treatment. Gives complete working information on everything from selection of the right steel to heat treating methods and equipment, hardness and toughness testing, latest data on high speed and hot work steels. 564 pages, 355 charts, photos, diagrams give you facts on: how design affects heat treatment, hardenability tests, time required to heat different tools to required hardening and drawing temperatures, furnace atmospheres, quenching, tempering, trouble-shooting.

PLUS 80-PAGE ALPHABETICAL SELECTOR SHOWING WHICH STEEL TO USE FOR ALMOST EVERY TOOL AND DIE. Use this book to train new men and upgrade skilled men.

OVER 100,000 COPIES IN USE! CLIP AND MAIL NOW

THE CARPENTER STEEL CO. • READING, PA. • DEPT. BX-2

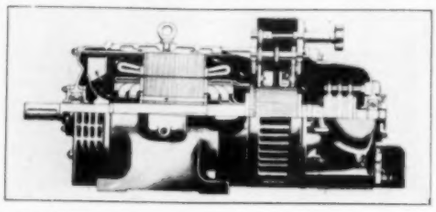
Please send me, postpaid, your revised "Tool Steel Simplified". I enclose $2.00 ($2.50 outside U.S.A.) in full payment of the book.

NAME _____ TITLE _____
FIRM NAME _____
MAILING ADDRESS _____
CITY _____ STATE _____
(Please print)

BREVITY—Identify by IEN - 2181 if you write the maker

MOTOR . . Variable speed ac., zero to 2,400 rpm., 1½ to 15 hp.

Source: BELGIAN ELECTRIC SALES CORP.
One E. 53rd St., 9th Floor, New York 22, N. Y.



Type AVC is a new motor in the Belgian Schrage line. The company is prepared to supply and to service it in the United States in five sizes between 1½ and 15 hp. and in various speed ranges. The motor is available for operation on 220 or 440-volt, 3-phase, 60-cycle ac. on 60-deg. C. temperature rise. It lists at $827 to $1,414 in the five sizes with a speed range between 600 and 1,800 rpm. The list is $958 to $1,687 in a range between 0 and 2,400 rpm. On no load, the rotor revolves at synchronous speed of 1,200 rpm. Maximum will not exceed 2,400 rpm. so the motor is suited for drive connection by means of a belt.

Construction employs two rotor windings, one of which is similar to that of an induction motor with connection to the circuit through three slip rings. The other resembles that of a dc. generator and is connected to a commutator with three sets of brushes, one set of two each for each pair of poles. A starter winding, similar to an induction motor, has its phases electrically separated with connection at their two ends to each pair of brushes on the commutator. Speed is regulated by altering the relative position of the brushes, the difference between the lowest and highest speed and synchronous speed depending on the voltage which is generated from the regulating winding.

Brush position is controlled by turning a gear-connected knob on the top of the motor housing or by employing a servo motor connected to the knob shaft for remote control. Overall dimensions in the five sizes are approximately 32½ to 48 in. in overall length, 13¼ to 18¾ in. in base width, 16½ to 23 in. in height for manual-control design.

Bulletin, 8 pages, "Type AVC Adjustable Speed Induction Motors" presents general and sectional illustrations with technical data covering construction, characteristics, operation, dimensions and connection details.

BREVITY—Identify by IEN - 2182 if you write the maker

GAGE . . Carbide scriber for company's vernier height gage

Source: L. S. STARRETT CO.
100 Starrett St., Athol, Mass.

Sharp lines can be scribed for layout purposes on hardened steel or glass by application of the company's new No. 454X carbide scriber in its No. 454 height gage. Two sizes are available for the 10, 18 and 24-in. gages. Both interchange with the standard scribers supplied with the gages.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

BREVITY—Identify by IEN - 2183 if you write the maker

Move, Store, Tier Materials with TRUSCON STEEL BOXES

More efficient movement and delivery of materials to production lines! More efficient storage and tiering of materials, parts and finished products!

You secure these money-saving, cost-reducing advantages when you use Truscon Steel Boxes and Skid Platforms throughout your plant. They can solve a wide variety of handling problems, simplifying operations, speeding production . . . encouraging profits.

Write for catalog and information today.

TRUSCON STEEL COMPANY
Subsidiary of Republic Steel Corporation
YOUNGSTOWN 1, OHIO

BREVITY—Identify by IEN - 2184 if you write the maker

THE di-acro NOTCHER

Duplicates Precision Notches WITHOUT DIES!

The new precision DI-ACRO Notcher eliminates the need for punch press and dies on many production notching operations. It is also ideal for experimental work as it can be quickly adjusted for any size or shape notch. Many straight shearing operations can also be performed with this flexible unit.

CUTS CLEAN — NO BURRS OR ROUGH EDGES The powerful DI-ACRO Notcher has an exclusive roller bearing cam design which provides a tremendous pressure with a small amount of effort. The precision-ground Vee-shaped ram and blades of alloy tool steel assure clean cuts and permanent accuracy.

LARGE CAPACITY. The DI-ACRO Notcher cuts 90° notches up to 6" by 6" in 16 gauge steel in one operation. Larger notches, and wider or narrower angles, can also be obtained.

SEND FOR 40-PAGE CATALOG. Gives full information on all six "DIE-LESS DUPLICATING" production boosters—DI-ACRO Benders, Brakes, Shears, Rod Parters, Punches, Notchers—with many examples of accurately duplicated parts.

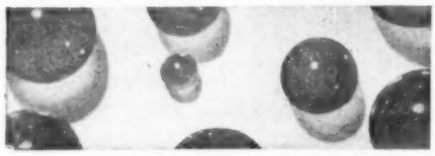
DI-ACRO is pronounced "DIE-ACK-RO"

DI-ACRO DIE-LESS DUPLICATING

O'NEIL-IRWIN MFG. CO.
318 8th Avenue, LAKE CITY, MINN.

BREVITY—Identify by IEN - 2185 if you write the maker

NOW — Precision Balls of Synthetic Sapphire



These balls of synthetic sapphire, polished to within 20 micro-inches of sphericity, are resistant to wear, heat, and corrosion. In many applications they need not be lubricated.

Available in 1mm, 1/16 inch, ⅛ inch, and ¼ inch sizes, and in three surface finishes.

PROPERTIES

Coefficient of Friction	0.140
Hardness (Knoop)	1525-2000
Dielectric Constant	7.5-10
Modulus of Rigidity	21.5-27.5 x 10^6psi
Thermal Coefficient of Expansion at 50°C (per C x 10^6)	5.0-6.7
Chemical Resistance	Unaffected by acids, dilute alkali.

Call or write any LINDE office for information on these balls or the other forms of synthetic sapphire.

LINDE AIR PRODUCTS
A Division of Union Carbide and Carbon Corporation
30 East 42nd St. UCC New York 17, N. Y.
In Canada: Dominion Oxygen Company, Limited, Toronto

BREVITY—Identify by IEN - 2186 if you write the maker

for • SPRAYING • WASHING • RINSING • COOLING • AIR CONDITIONING

Get the most out of your Spraying Equipment with minimum power . . . with efficient spraying.

Use Yarway Nozzles. No internal vanes or other restrictions to clog or hinder flow.

Wide range of standard sizes and capacities. Cast or machined from solid bar stock.

Thousands in use. Write for Bulletin N-616.

YARWAY

SPRAY NOZZLES

YARNALL-WARING COMPANY
122 Mermaid Avenue, Philadelphia 18, Pa.

BREVITY—Identify by IEN - 2187 if you write the maker

Precision plastics in small lots are now available at the lowest possible die mold cost. This new method is primarily for pilot runs in the production of 100 to 5000 small precision plastic moldings for experimental and other purposes where conventional type die molds would be prohibitive.

Present capacity: ¾-ounce size, 2 x 3 x 1"

Your inquiries are invited.

DAYTON ROGERS
Manufacturing Company
MINNEAPOLIS 7, MINNESOTA

BREVITY—Identify by IEN - 2188 if you write the maker

Ledeen CYLINDERS IMPROVE THE JOB

Write for your copy Today!

Their USES, FEATURES, SELECTION, MOUNTING, and APPLICATION

Discussed in New Bulletin 500

Wherever you have to push or pull, lift or lower, press or squeeze, tilt or turn, open or close.

Ledeen cylinders are good cylinders!

Ledeen Mfg. Co.
1602 San Pedro St. Los Angeles 15, Calif.

BREVITY—Identify by IEN - 2189 if you write the maker

NEW IMPREGNATED FELT GASKETING MATERIAL

PREVENTS CORROSION AND ELECTROLYSIS

SEALS AGAINST DUST, WIND & WATER

CHROME LOCK consists of a high-grade felt, impregnated with a specially formulated blend of permanently thermoplastic resins, plasticizers, inert pigments and chromates. Prevents corrosion on original installations — stops corrosion when applied to rusty joints. Chrome Lock also inhibits *electrolytic action* between dissimilar metals.

CHROME LOCK has outstanding anti-aging qualities and will not deteriorate. Tests prove Chrome Lock far outlasts rubber. Chrome Lock is the ideal seal wherever anti-corrosion, anti-electrolysis and anti-aging properties are required! Read these added features:

- ★ **EASY TO APPLY:** Pressure-sensitive adhesive back.
- ★ **ANTI-WICKING:** Non-soluble in water or saline solutions. Prevents seepage under normal pressure applications.
- ★ **LIGHTER FLANGING MATERIALS:** Low pressure compressibility reduces required bolt torque pressures.
- ★ **MANY TYPES:** (Type S) Standard Material.
  (Type N) Flame Resistant. Conforms to Bublips Spec. 33F9.
  (Type OR) Oil Resistant. Used wherever S.A.E. 10-60 oils are present.
- ★ **MANY SIZES:** Thicknesses of 1/64", 1/32", 1/16", 1/8" and 1/4". Widths from 1/4" to 60".
- ★ **CUT GASKETS:** Made to your specifications.
- ★ **NATIONWIDE SERVICE:** Sales engineers in all principal cities.

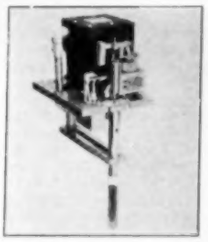
Write on your company letterhead for new, 6 page Engineering Folder No. SP-1051

Manufactured by Products Research Company
SPRING PACKING CORPORATION
332 S. MICHIGAN AVE. • CHICAGO 4, ILLINOIS

BREVITY—Identify by IEN - 2190 if you write the maker

TESTING . . Viscosity meter for operation in explosive locations

Source: NORCROSS CORP.
245-49 Newtonville Ave., Newton 58, Mass.



New assembly of the measuring element in the company's viscosity meter is available to meet Class 1 Group D requirements for operation in hazardous locations. The unit is designed to operate with a remote indicating or recording instrument as previously described IEN-7178-49. It is suited also for manual test in a liquid.

The sampling tube is immersed in the liquid and a motor-driven cam at the top of the tube alternately raises a plunger and releases it to drop by gravity. Time required for the plunger to drop through the liquid which its upward movement has drawn into the tube is the measure of liquid viscosity. This time interval is transmitted to the recorder electrically and is translated into pen movement on the recorder chart.

BREVITY—Identify by IEN - 2191 if you write the maker

COUNTING . . Accessory drive for company's wheel type counters

Source: PRODUCTION INSTRUMENT CO.
700-10 W. Jackson Blvd., Chicago 6, Ill.

Operating speed to 4,000 cpm.

A flexible shaft and a pair of brackets for the driving and driven ends are now available with the company's wheel-type counter, previously described IEN-9540-50. The shaft is 12 to 36 in. in length. The counter can be specified with 5 or 7 wheels. Its housing measures about 5 by 4 by 2½ inches.

BREVITY—Identify by IEN - 2192 if you write the maker

CASTER . . Saucer type swivel unit moves easily over a rough floor surface

Source: FAULTLESS CASTER CORP.
1519-23 N. Garvin St., Evansville 7, Ind.

Climbing ability to come up out of depressions in a floor or to ride over obstructions characterizes the action of this new Upsi-Dazy caster. It mounts a 3-in. cadmium-plated wheel with a cold-forged hub on a hardened thrust bearing. The wheel shaft is riveted to an offset steel plate or bracket that rides in ball-bearings at the swivel point.

The caster is available with a rectangular top plate or with a ⅜-in. threaded stud measuring ½ in. in length. Height to the plate is 2¼ inches. The caster is able to handle light loads, is suited particularly for use on "creepers" on which a worker can lie to ride under a machine or vehicle.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2193 if you write the maker

BREVITY—Identify by IEN - 2194 if you write the maker

Thermohm electric resistance thermometer used with Electromax Controller

This Electromax Controller provides modern *electronic* regulation for temperatures of ovens, furnaces, kettles, tanks, etc. Type of regulation can be either on-off or proportional, yet the instrument is the acme of dependable simplicity. Being a resistance bridge, it needs no standard cell; has only one moving part; is not affected by tremors or vibration; usually needs no attention for months at a time. For details, write us at our nearest office or at 4905 Stenton Avenue, Philadelphia 44, Pa.

LEEDS & NORTHRUP COMPANY, 4905 STENTON AVE., PHILA. 44, PA.
LEEDS & NORTHRUP
MEASURING INSTRUMENTS · TELEMETERS · AUTOMATIC CONTROLS · HEAT-TREATING FURNACES
Jrl Ad ND47(1c)

BREVITY—Identify by IEN - 2195 if you write the maker

COST-CUTTING CARRIER

Rex TableTop Conveyor Chain is known throughout industry for cutting handling costs *three* ways. *First,* its original cost is low. *Second,* the wide bearing area of specially designed sprockets assures longer, trouble-free life. *Third,* its smooth, steady operation reduces spillage, breakage and jamming to the absolute minimum.

Rex TableTop is ideal for conveying bottles, cans, packages and small parts. Our booklet containing all the details has recently been revised. Send for your copy today.

REX DRIVE AND CONVEYOR CHAINS

50-120

Chain Belt Company
1609 W. Bruce St.
Milwaukee 4, Wis.

Please send me a copy of Bulletin 50-30.

Name.....
Company.....*Dept*.....
Address.....
City.....*State*.....

BREVITY—Identify by IEN - 2196 if you write the maker

BLAW-KNOX DIVISION
OF BLAW-KNOX COMPANY
2050 Farmers Bank Bldg.,
Pittsburgh 22, Pa.
Offices in Principal Cities

1. Rigid one-piece construction—easy to install.
2. Maximum open area for light and air.
3. Easy to paint—all surfaces accessible.
4. Non-slip Twisted Cross-Bar.
5. Self-cleaning—no sharp corners to clog.

Blaw-Knox Grating Has Them All!

WRITE FOR BULLETIN 2365

BREVITY—Identify by IEN - 2197 if you write the maker

The Really Rugged Bar Iron Truck You've been waiting for!

Heavy duty for bars, tubes and angles.

LANSING COMPANY

TRUCKS · BARROWS · CARTS
TRAILERS · CASTERS · SKIDS

"Keep Your Products on Wheels"

Main Office and Factory: LANSING, MICH.

BREVITY—Identify by IEN - 2198 if you write the maker

THOMAS TRUCK & CASTER CO.

162 MISSISSIPPI RIVER
KEOKUK, IOWA

BREVITY—Identify by IEN - 2199 if you write the maker

HOOKS, TONGS GRIPS and SLINGS

SPEED UP HANDLING SAFELY!

Downs Grabs are designed to do a multitude of lifting jobs faster with a greater margin of safety. Handling steel coils, heavy bags, plate and structural steel, bar stock, drums, etc., is always easier with Downs Grabs. Learn about savings . . . Write for free Bulletin No. 2006.

DOWNS CRANE & HOIST CO.
MECHANICAL ENGINEERS
540 W. VERNON AVENUE
LOS ANGELES 37, CALIF.

Electric Cranes • Hand Cranes • Jib Cranes • Sheaves • Sheave Blocks Plate Grips • Plate Hooks • Crane Trolley Hoists • Crane Wheels • Crane End Truck Units • Jib Crane Fittings • Automatic Mechanical Load Brake Crane Hook Blocks

BREVITY—Identify by IEN - 2200 if you write the maker

VIBRATING . . Electric assembly for bins, chutes, hoppers, forms

Source: SYNTRON CO.
410 Lexington Ave., Homer City, Pa.

New design in the company's pulsating magnetic electric vibrator replaces metallic striking parts with rubber bumpers to produce an assembly in which noise is minimized. The new unit is available in four models weighing 30 to 247 lb. for operation at 3,600 cycles per min. with input at 3 to 15 amp. on 110-volt, 60-cycle ac. Input also can be specified at 220 or 440-volt ac. Operation is regulated by the company's Type-VCR controller.

The smallest unit, Model V-30, has sufficient capacity to vibrate a hopper made of sheet metal to $\frac{3}{16}$ in. in thickness and containing as much as 20 cu. ft. of material. The largest model, V-240, is intended for difficult applications as on large storage bins and bunkers containing iron ore, wood chips, refractory clay, wet sand.

BREVITY—Identify by IEN - 2201 if you write the maker

MARKING . . Self adhesive labels for identification of fluid lines

Source: WESTERN LITHOGRAPH CO.
602-6 E. 2nd St., Los Angeles 54, Calif.

Company will send samples

New design has been added to the company's line of self-adhesive labels which are supplied in card mountings for convenient handling. The labels are available to mark lines handling compressed gas, coolants, oxygen, air, water, liquid chemicals. They are known as Fluid Line Markers and are available in standard symbols and codes to conform to the new International AND-10375 and AAF-27643. Size and printing are subject to specification.

BREVITY—Identify by IEN - 2202 if you write the maker

LIGHTING . . Concentrating lens for 40 to 100 watt incandescent lamp

Source: CLARKSTAN CORPORATION
11919-23 West Pico Blvd., Los Angeles 64, Calif.

List price is $1 for this new Spiralens fresnel type of plastic lens to concentrate illumination from an incandescent lamp on a spot measuring about 4 in. in diameter at a distance of 12 in. from the lamp. The lens is $\frac{1}{8}$ in. in thickness by $2\frac{1}{2}$ in. in diameter. Its effective focal length is $2\frac{1}{2}$ inches. It clips to the lamp as shown in the illustration, increases brightness of the general illumination by about five times in the 4-in. area in which the illumination is concentrated by the new lens.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2203 if you write the maker

Ramps Tilt to Meet Any Truck Bed. Automatically Adjust to Changing Level.

Speed up HANDLING

WAYNE LOADING DOCK LIFTS

Save time and money with Wayne Hydraulic Leveling Ramps to adjust the level of the loading dock to the truck bed. Platform automatically adjusts itself. Material can be directly transported into and out of truck. Eliminates breakage and accidents. Cuts loading time in half.

THE WAYNE PUMP COMPANY
531 TECUMSEH STREET, FORT WAYNE 4, IND.

NATIONWIDE SERVICE

BREVITY—Identify by IEN - 2204 if you write the maker

PRODUCTION INSURANCE against GAS CURTAILMENT

ASSURED with VAPOFIER

Many costly plant shutdowns have been avoided by installing Vapofier as a dependable gas supply. Over 100 varied types of industries use it. Produces clean, sootless, odorless gas by vaporizing (not atomizing) fuel oil. Reliable automatic control, constant fuel-air ratio and uniform manifold pressure. Quick change from utility gas without flame interruption, using same piping and burners. 9 sizes with capacities from 70,000 to 4,000,000 B.T.U.'s per hour.

Write for complete details on the advantages of firing with Vapofier.

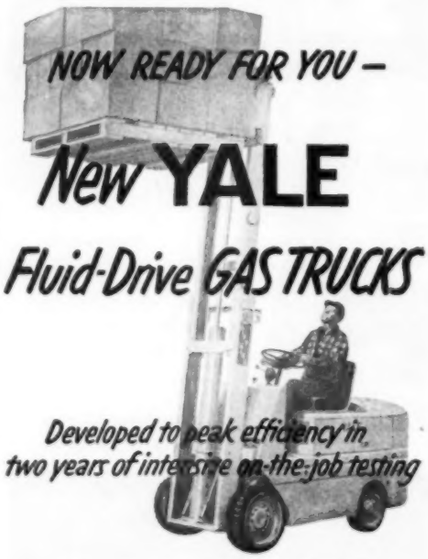
VAPOFIER CORP. • 10326 S. Throop St., Chicago 43, Ill.

BREVITY—Identify by IEN - 2205 if you write the maker

NOW READY FOR YOU —

New YALE

Fluid-Drive GAS TRUCKS



Developed to peak efficiency in two years of intensive on-the-job testing

Here's proof that YALE gives more for your money!

Only YALE gives you fluid-drive for smooth, powerful operation—longer truck life:
Now you can get the same efficient power transmission used in expensive passenger cars. Smooth, *full* power at any speed—even fully loaded on ramps! No jerky stops and starts—you can work in closer quarters, cut down load breakage, reduce driver fatigue, save tires and power transmission parts, *lengthen clutch life 3 to 6 times!*

Only YALE gives you this extra-power combination—hypoid gearing—65HP engine:
Here is a newly developed power team that can handle capacity loads, steep grades, heavy road shock day after day in any weather—and still stay on the job with an absolute minimum of maintenance!

Only YALE gives you all these exclusive money-saving features:
Sealed automotive type hydraulic brakes give greater safety. Shockless steering provides easy "passenger car" control. Cold drawn, precision aligned uprights assure smooth, even lifting. *Every* vital part, in fact, has been designed and developed to give you *more truck for your money.*

Now, get your own on-the-job proof:
Now, when manpower, time and production are at a premium, is the time to see for yourself how much more this amazing new YALE gas fork truck can do for you. Write for complete information today.

Capacities up to 10,000 pounds

YALE
MATERIALS HANDLING DIVISION

The Yale and Towne Manufacturing Co. Dept. No. 363
Roosevelt Blvd. & Haldeman Ave., Philadelphia 15, Pa.
I am interested in cutting my materials handling costs.
_____Please have your local representative call on me.
_____Please send me FREE detailed literature.
Name_____
Company_____
Street_____
City_____ State_____

BREVITY—Identify by IEN - 2207 If you write the maker

Parker-Kalon GROUND THREAD Socket Set Screws

SET RIGHT with SHOP MEN

RIGHT START Quick starting. Speed assembly work and improve production.

RIGHT FINISH Made from hardened stock. Smoothness of a true ground finish.

RIGHT FIT Free from nicks, burrs and tool marks. Dependable Class 3 Fit.

RIGHT BUY More for the money—in quality—in performance.

SEE FOR YOURSELF!

Send for Samples. Notice how much smoother (and easier starting) P-K* Quality Controlled Socket Set Screws are, the way they "set up" to dependable security. Once you try 'em, you'll use them regularly — to speed assembly work. Write for samples. Parker-Kalon Corp., 200 Varick St., New York 14, N. Y.

P-K

PARKER-KALON*
cold-forged
SOCKET SCREWS

*TRADE MARKS REG. U.S. PAT. OFF.

Size-Marked Socket Head Cap Screws • Ground Thread Socket Set Screws
Flat Head Socket Cap Screws • Stripper Bolts • Pipe Plugs • Hex Keys
Available Everywhere Through Accredited Distributors

BREVITY—Identify by IEN - 2208 If you write the maker

INDUSTRIAL SPEED-UP

demands

these POWER-DRIVEN

PRODUCTION AIDS

Now, more than ever, speed in production is the order of the day . . . That's why these popular D.P.S. power-driven machines prove a greater-than-ever contribution to present-day industrial needs.

POWER SCREWDRIVER
(Model A)

Detroit Power Screwdrivers are hopper-fed and furnished in three models to drive from No. 2 to ⅝" cap screws. Will drive all types of screws, as fast as one a second . . . All driven to uniform tension . . . Will not strip threads or mar heads. Great time and labor-saving machines that boost production assembling and bring labor costs down.

NUT DRIVER

A revolutionary new machine that drives nuts with amazing speed, either semi-automatically, or it can be adapted to full automatic operation entirely eliminating the manual handling of nuts. Capacity: nuts, ¾" min. to 1⅛" max. across flats.

HOPPER UNIT

Motorized—Highly Adaptable—A selective feeding device whereby production parts are selected, oriented and fed in a given position for primary and secondary operations.

SEND SAMPLE ASSEMBLY FOR PRODUCTION ESTIMATE

MAIL COUPON FOR CATALOG

DETROIT POWER SCREWDRIVER CO.
2815 WEST FORT ST., DETROIT 16, MICHIGAN

Send your catalog and further details.

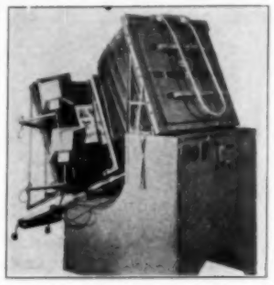
COMPANY NAME _____
BY _____
STREET ADDRESS _____
CITY _____ STATE _____

DETROIT POWER SCREWDRIVER CO.

BREVITY—Identify by IEN - 2210 If you write the maker

PHOTOGRAPHING . . Process camera for photographing and reproduction

Source: MERRITT LACEY CORP.
29-33 Central Ave., Newark 2, N. J.



List price is $975.00 for the company's new process camera with a lens for specified work, a 30 by 30-in. easel or copy board and four adjustable lights. The camera is positioned on a 30-deg. operating angle. Its focus plate measures 24 by 24 inches. A calibration device can be employed with any focal-length lens. A chart for this purpose is supplied with each machine. A built-in automatic timer controls exposure intervals.

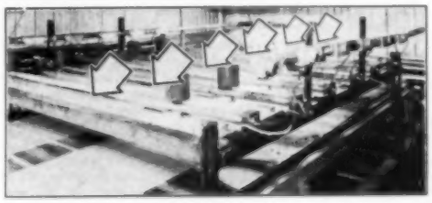
Lenses of varying focal lengths are available to provide a range of enlargement or reduction to approximately 10 to 1. Two view plates enclosed in metal frames, one plain glass and the other ground glass, are included as standard equipment. The ground glass is used when it is decided to attach the film to the under surface in order to avoid photographing through glass. Equipment also includes a standard Lacey-Luci pressure back, which closes and locks in position to apply even pressure over the view or focal plate so a vacuum frame is not required.

Photocopy, silk-screen positive, plastic plate, silk-screen stencils, layout tracings and general art functions can be performed with the one machine. Floor space required, including room to swing the adjustable light, is 36 by 84 inches.

BREVITY—Identify by IEN - 2211 If you write the maker

DRYING . . Infra-red element and conveyor to dry plastic sheets

Source: EDWIN L. WIEGAND CO.
7505 Thomas Blvd., Pittsburgh 8, Pa.



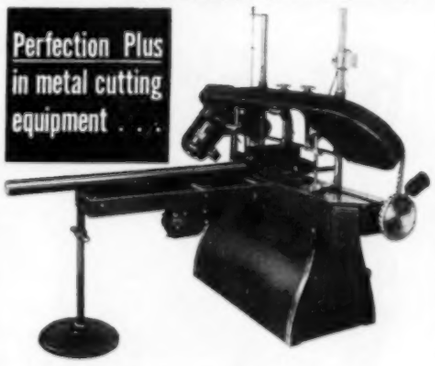
New application of six of the company's electric radiant heaters operates in connection with a conveyor carrying vinyl-plastic sheet. The conveyor measures 48 in. in width and operates at 22 fpm. to provide a total radiation exposure time of 15 seconds.

The heaters are on 10-in. centers and are mounted 6 in. above the sheet. They are installed so they can be turned away from the sheet by operating a hand lever in the event that the conveyor is stopped. The drying operation follows a water rinse and is prior to application of the sheet in the manufacture of safety glass.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 89

BREVITY—Identify by IEN - 2212 If you write the maker

Perfection Plus in metal cutting equipment . . .



. . . . by the PIONEERS in this field!

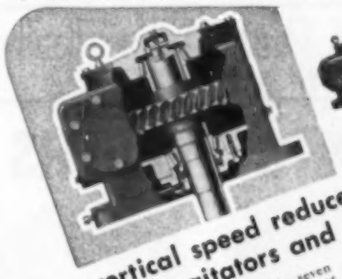
Production volume UP, manufacturing costs DOWN—that's the job our band saws are doing in plant after plant. Big 14" x 18" capacity gives broad operating range. Fully automatic—motor driven, hydraulically controlled. Perfected by the pioneers in electric band saw manufacturing, these units guarantee the utmost precision accuracy.

Investigate the money saving possibilities offered by our line of trouble-free saws. Coolant system for wet cutting, automatic move-up system, and other accessories available as described in our FREE illustrated catalog.

WRITE TODAY FOR COMPLETE INFORMATION

W. F. WELLS & SONS
Three Rivers, Michigan

BREVITY—Identify by IEN - 2213 If you write the maker



Type ND, with drive shaft down

A new vertical speed reducer to drive agitators and mixers

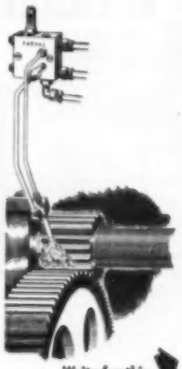
IMPROVED worm gear drive—in seven sizes each of two types—ready for prompt delivery. Designed especially for agitators and mixers, and for use with overhead chain conveyors, as well.

WRITE for a copy of the new Cleveland Bulletin No. 125, describing types NU and ND, with capacity charts and dimension data. The Cleveland Worm & Gear Co., 3258 East 80th St., Cleveland 4, Ohio.

CLEVELAND
Worm Gear
Speed Reducers

BREVITY—Identify by IEN - 2214 If you write the maker

New Farval Spray Valve



Write for this FREE bulletin

METERS LUBRICANTS TO SLIDE SURFACES AND OPEN GEARING

BY an ingenious adaptation of the familiar Farval Dualine Valve, either grease or oil is sprayed through a nozzle—onto any desired area, in any amount, at any interval.

The new Farval Spray Valve can be added to a regular Farval Dualine Lubrication System wherever compressed air is available—or a complete system of spray valves may be installed, served by either manual or automatic pumping unit.

Farval Spray Valves have been thoroughly tested in service on a wide variety of machines and equipment, supplying lubricant efficiently, economically and safely to open gearing, slide surfaces and other areas where Farval closed systems are not readily adaptable.

For full description with diagrams, get Farval Bulletin No. 60. The Farval Corporation, 3258 East 80th Street, Cleveland 4, Ohio.

FARVAL
CENTRALIZED SYSTEMS OF LUBRICATION

BREVITY—Identify by IEN - 2215 If you write the maker

Announcing **NEW** Semi-Automatic

PINES BENDING MACHINE

SAVES TIME, CUTS COSTS ON SHORT RUN, PRODUCTION, AND MAINTENANCE WORK

SPECIFICATIONS
PINES SERIES 1400 BENDER

- Maximum Capacity—1" O.D. 16 ga. steel tube.
- Maximum Radius of Bend—8½" to centerline.
- Length of Tubes—Up to 5 ft. standard.
- Bending Speed—29 R.P.M.
- Working Height—35".
- Overall Size (Floor Space)—3' x 7'.
- Pressure—1000 P.S.I.
- Pump Motor—3 H.P.
- Pump—7 G.P.M. (Vickers).
- Optional—Adjustable gages . . . provision for any length of tube, mandrel for critical bends.

Fast, Easy to Operate—Forms Smooth, Neat Bends Quickly

Eliminates many slow, tedious hand bending operations. Is especially designed to cut costs on work formerly considered too variable for fully automatic equipment. Fast and easy for one man to operate. Hydraulic bending arm forms smooth, neat-looking bends quickly. Clamp and die rollers (or sliding dies) are operated by hand toggle levers. Hand wheel provides immediate angle-of-bend selection. *Typical production:* 500 bends per hour on 1"-16 gage steel tube.

Ask for An Analysis of Your Bending Problems

Write today for free literature. Find out how a Pines Bender can be applied to your work. *Ask for an analysis of your bending problems.* There's no obligation.

PINES ENGINEERING CO., Inc.

BREVITY—Identify by IEN - 2216 if you write the maker

Feed Parts Automatically with SYNTRON PARTS FEEDERS

INCREASE CAPACITY of grinders and presses, inspection and packaging devices, and other automatic processing equipment AT REDUCED COSTS by feeding parts of most sizes, shapes and materials single file . . . at variable rates . . . in oriented position . . . and without damage.

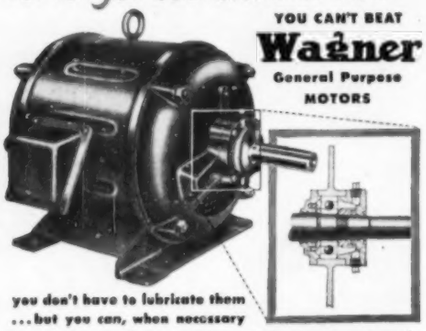
Catalog data upon request. Or send details of your problem along with sample parts to . . .

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

BREVITY—Identify by IEN - 2217 if you write the maker

for longer useful motor life—

YOU CAN'T BEAT Wagner General Purpose MOTORS



you don't have to lubricate them ...but you can, when necessary

Wagner bearing housings are effectively sealed against the entrance of dirt or grit that cause rapid wear. You don't have to lubricate the bearings (motors in the smaller frame sizes will often operate for the life of the unit without lubrication) but, Wagner Motors are provided with two lubrication openings—you *can* lubricate them, to add much useful motor life where the motors are used in tough applications.

Wagner's new Bulletin MU-131 gives full information on the proper lubrication of electric motors—write for your copy.

Wagner Electric Corporation 1891 1951
6414 PLYMOUTH AVENUE ST. LOUIS 14, MO.
ELECTRICAL EQUIPMENT AND AUTOMOTIVE BRAKE PRODUCTS

BREVITY—Identify by IEN - 2218 if you write the maker

BIN-LEVEL CONTROLS

2 BIN-DICATORS Often Replace 1 Man

BIN-FLO Aerating Units Keep Finely-Ground Materials Moving

ECONOMICAL MATERIAL CONTROL

DEPENDABLE BIN-LEVEL INDICATION

Mail this Coupon

THE BIN-DICATOR CO., 13946 Kercheval, Detroit 15, Mich.

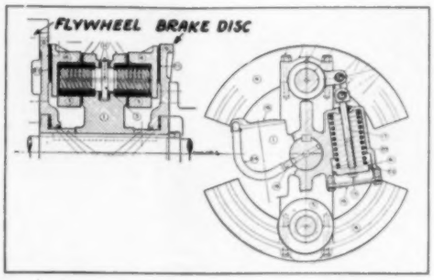
Please send new 20-page catalog giving complete information and specifications on BIN-DICATORS. Also please send information on BIN-FLO Aerating Units.

Name _____
Address _____
City _____ Zone _____ State _____ N-2

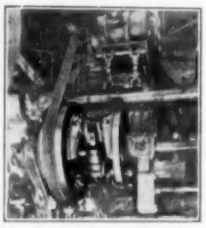
BREVITY—Identify by IEN - 2219 if you write the maker

DRIVE . . Combination clutch brake, pneumatic operation, for machine drive

Source: POWER PRESSES INC.
615-A Penton Bldg., Cleveland 13, Ohio



The mechanism in this new clutch-brake lies between two discs or plates. One is secured to the power input, such as the flywheel on a press. The other is anchored to a stationary member such as the press frame. The mechanism is keyed at its center to the output shaft. It mounts two integral air cylinders with air connection through the shaft and a solenoid control valve to a shop line and to exhaust. Air pressure, admitted by closing the solenoid circuit, moves the cylinder pistons against the action of preloaded compression springs to turn cranks and rotate centrally-anchored screws. The screws rotate in nuts carrying friction-faced heads. They move the nuts to the left for brake release immediately followed by drive engagement as the heads contact.



The nut bodies act as the drive connection between the friction shoes and the mechanism hub for output rotation. Releasing the air pressure, by opening the solenoid circuit, permits the springs to return the pistons, reverses rotation of the screws and moves the nuts to the right. This releases the drive and immediately sets the brake. The arrangement results in clutch release and brake setting for fail-safe operation in the event of air pressure or electric current failure in the machine supply.

Clutch diameters range from 15 to 44 in. in diameter for torque rating from 12,500 to 350,000 inch pounds. Normal operating air pressure is 65 pounds. Maximum speed, based on safe lining speed, is about 3,000 fpm. In addition to the combination assembly, the company is prepared to supply single-clutch and single-brake units to specification.

Characteristics are accessibility of the operating parts, provision for replacement of shoe and line assemblies in a few minutes coupled with an exchange setup by which the company supplies new units to eliminate field repair. Wearing parts can be removed and replaced while the clutch is in place in a machine. It is not possible to engage both brake and clutch at the same time.

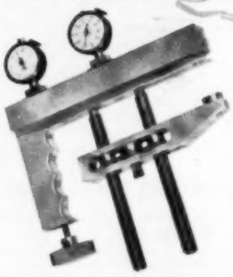
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 39

FIND WHAT YOU WANT?
All products and services are listed in the index, page 110

BREVITY—Identify by IEN - 2220 if you write the maker

Portable HARDNESS TESTER

DIRECT DIAL ROCKWELL READINGS



- FOR "ON THE SPOT" TESTING of bar stock • sheet stock • tubing • gears • crankshafts • cylinder blocks • and other hard-to-get-at pieces.
- ACCURATE, EASY TO USE
- TESTS BOTH INSIDE AND OUTSIDE SURFACES of specimens up to 5" in diameter or thickness.
- COMES IN COMPACT CARRYING CASE with three test blocks, flat anvil, "V" anvil, convex anvil, diamond and ball indenters.

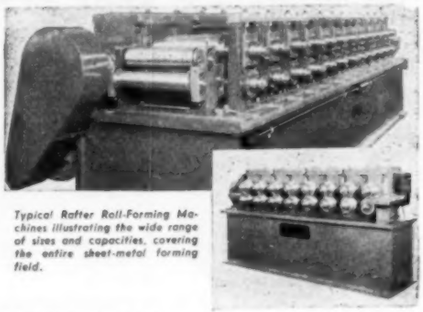
WRITE FOR ILLUSTRATED BULLETIN AND PRICES

RIEHLE TESTING MACHINES
Division of AMERICAN MACHINE AND METALS, INC.
East Moline, Illinois
"ONE TEST IS WORTH A THOUSAND EXPERT OPINIONS"

BREVITY—Identify by IEN - 2221 if you write the maker

RAFTER COLD METAL ROLL-FORMING MACHINES

Correct Design for Maximum Efficiency



Typical Rafter Roll-Forming Machines illustrating the wide range of sizes and capacities, covering the entire sheet-metal forming field.

Patented balanced gear drive mounted on roller bearings distributes power efficiently to each pair of rolls . . . Gear ratio is a continuous reduction from drive shaft to roll shaft, quiet, efficient and compact. This drive consumes less power than any other type . . . Exclusive design permits greatest vertical adjustment of the upper roll spindles, without the aid of square gearing or small complicated gears . . . Design permits quickest and most accurate change of rolls possible. Shafts always remain parallel. Adjusting screws connect front and rear bearings . . . Low power consumption, lasting accuracy, longer roll life, and higher output are made possible by these and many other features.

RAFTER MACHINE COMPANY, INC.
SINCE 1917
249 Stephens Street • Belleville 9, N. J.
GANG SLITTERS and PRESS BRAKE DIES

BREVITY—Identify by IEN - 2222 if you write the maker

Write for Catalog OF USES and SPECIFICATIONS

GENERAL Industrial Pneumatics

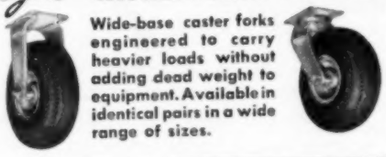
ADD THESE 6 SELLING POINTS TO YOUR PRODUCT

SAVE
• TIME • LABOR
• FLOORS

REDUCE
• BREAKAGE
• MAINTENANCE
• COSTS

Available in assemblies of Tires, Tubes and Wheels. Size O. D. 8" to 27"—200 to 4000 lbs. cap. for low or high speeds.

Rigid CASTER FORKS Swivel



Wide-base caster forks engineered to carry heavier loads without adding dead weight to equipment. Available in identical pairs in a wide range of sizes.

More AIR VOLUME • More STABILITY • More LOAD CAPACITY
DELIVERS Long Mileage IN HI-SPEED SERVICE

SEND FOR CATALOG . . . DEPT. 3
THE GENERAL TIRE & RUBBER CO. AKRON, OHIO

BREVITY—Identify by IEN - 2224 If you write the maker

HANNIFIN AIR CONTROL Valves

NEWEST TYPES! EXCLUSIVE DESIGNS for EVERY PURPOSE!

THE Hannifin line of Air Control Valves is complete—sizes and types for every purpose! Hannifin leads with newest, exclusive designs for fast, effortless control of air cylinders, presses, and other air operated equipment. Ask for recommendations.

"PACKLESS" HAND OPERATED

Simple, smooth-acting, positive 3-way or 4-way valves. "Packless" rotary disc type. Self-lapping. Sizes from 1/8" to 1 1/4". *Ask for Bulletin 57W.*

"EFFORTLESS" HAND OPERATED

Fast, new, finger-tip, pilot operated sliding disc valve. Effortless; air pressure does the work! For single or double acting cylinders. *Ask for Bulletin 251.*

"PACKLESS" FOOT OPERATED

Treadle type; leaves operator's hands free for other work. Tight-sealing, self-lapping, rotating bronze disc. Sizes 1/4" up to 3/4". *Ask for Bulletin 57W.*

"EFFORTLESS" FOOT OPERATED

Fast, new, pilot operated, disc type valve. Light, effortless action. Rugged construction. With or without pedal guard. *Ask for Bulletin 250.*

HANNIFIN CORPORATION
1107 South Kilbourn Ave. • Chicago 24, Ill.

BREVITY—Identify by IEN - 2225 If you write the maker

FOR ON-THE-SPOT HEATING OF SOLID OILS TARS, GREASES, ETC.

CHROMALOX Immersion Heaters are especially designed for portable use in drums and tanks. They give the temperatures needed for efficiently melting coconut oils, lard, tar and similar viscous fluids. When put into drums the Heaters melt their way through contents without tilting. Units can easily be moved from one drum or tank to another. Ratings: 1100 to 4400-watts.

Want More Details?

Send for the free booklet "100 Ways to Apply Electric Heat" which illustrates Chromalox Heaters "at work."

EDWIN L. WIEGAND CO., 7505 THOMAS BLVD., PITTSBURGH 8, PA.
See Chromalox Electric Heaters Advertisement, Page 5

CHROMALOX 10-02

ELECTRIC HEAT FOR MODERN INDUSTRY

BREVITY—Identify by IEN - 2226 If you write the maker

the standard by which all other compounds are judged

'Bestolife Lead Seal Pipe Joint Compound has been the accepted standard for almost twenty years. Used on any air, steam, gas or liquid connection—at any temperature—at any pressure. 'Bestolife Lead Seal Pipe Joint Compound is guaranteed to give complete satisfaction—or your money back!

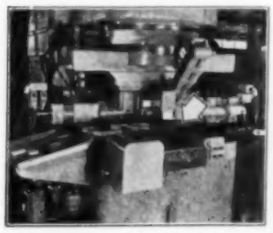
See Your Supply Dealer or Write for Literature and Prices

I. H. GRANCELL
1601 E. NADEAU ST., LOS ANGELES 1, CALIFORNIA

BREVITY—Identify by IEN - 2227 If you write the maker

GEAR CUTTING . . Unload attachment for company's rotary shaving machine

Source: MICHIGAN TOOL CO.
7169-73 E. McNichols Road, Detroit 12, Mich.



Finished work issuing from the company's rotary gear-shaving machine can now be taken by a motor-driven wire-mesh belt that mounts as an attachment on brackets at the machine front. The belt moves the work to the left for removal from the machine and permits one operator to service several machines in a line. In the actual installation, guards are provided at the sides of the belt to confine the work to the belt surface. Coolant moves down through the wire mesh for recirculation to the cutter. Application can be made on machines now in service.

BREVITY—Identify by IEN - 2228 If you write the maker

WATER PROOFING . . Chemical powder mixes with water for porous masonry

Source: DUREPEL CORP.
10 E. 43rd St., Room 404, New York 17, N. Y.

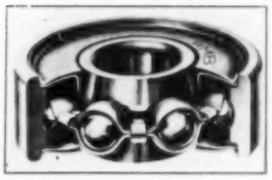
Also available in quantities

Durepel trade names new chemical powder ready to be mixed with water for brush or spray application on clean porous masonry surfaces, above or below grade. The solution penetrates into and expands in the pores of the masonry to seal them and form a non-soluble, non-absorbent bond with the masonry. Setting takes place within a few hours. The material is available in white and various shades of color. Coverage is 90 to 100 sq. ft. for the first coat on unglazed brick, cement, plaster, stone for each 8-lb. can.

BREVITY—Identify by IEN - 2229 If you write the maker

BEARING . . Sealed ball design with non-contacting seal plates

Source: LANDIS & GYR, INC.
104 Fifth Ave., Room 1402, New York 11, N. Y.



Capillary chamber is formed by the inward-facing plate flange and the tapered section of the inner race of this new bearing to maintain a permanent capillary film of oil that seals the bearing without contact between the inner race and the plate. The inner plate is held in position by an outer one that presses into a recess in the outer race. External surfaces of the bearing can be chromium plated when specified. Designation is Series R. F.

Bore sizes range from 3 to 8 mm. or .1181 to .3150 inch. Outside diameters are 10 to 22 mm. or .3934 to .8661 inch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2230 If you write the maker

SAFETY EQUIPMENT FOR ALL INDUSTRIES

IPCO M and M RAIL CLAMPS

For car stops, on loading platforms, temporary sidings, cars on grades, and traveling cranes . . . Used and recommended by leading Steel Companies, Manufacturing Plants, Mines, Grain Elevators, Cement Plants and Quarries.

Write for Bulletin F-31

IPCO *Safety Equipment for all Industries*
INDUSTRIAL PRODUCTS COMPANY
2801 N. FOURTH STREET • PHILADELPHIA 33, PA.

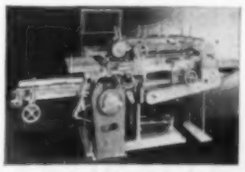
BREVITY—Identify by IEN - 2231 If you write the maker

Why so many choose our machines

Having developed over 80 basic models, we can supply machines for wrapping an almost endless variety of products. Executives find our machines efficient and highly versatile. In many plants, for example, packages of several different sizes are wrapped on a single machine. And the machine requires surprisingly little supervision and maintenance. High production speeds save valuable man-hours.

There's a Package Machinery Company representative in your area. Why not get his suggestions on how to improve your packaging methods?

Write for leaflet "Packages that Sell"



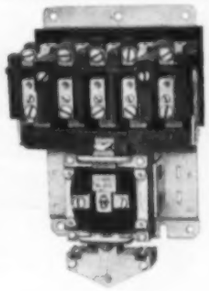
The Model FA—most widely used of all wrapping machines.

PACKAGE MACHINERY COMPANY
SPRINGFIELD, MASSACHUSETTS
NEW YORK · CHICAGO · BOSTON · CLEVELAND · ATLANTA · DALLAS

BREVITY—Identify by IEN - 2232 If you write the maker

NEW! Size 0 A-C Solenoid Contactor

with Multi-Pole Construction



Now Ward Leonard extends its line of improved solenoid contactors into the 15 ampere range—for fast, positive, consistent operation on load and control circuits.

Size O a-c solenoid contactors come with as many as 5 poles. Double break silver contacts may be interchanged to form normally open or normally closed contacts as desired.

Operating coils are interchangeable with Size 1 contactor coils. Available with d-c "power plants."

Write for Bulletin 4458. WARD LEONARD ELECTRIC CO., 33 South Street, Mount Vernon, N. Y. Offices in principal cities of U. S. and Canada.

WARD LEONARD ELECTRIC CO.
Result-Engineered Controls Since 1892
RESISTORS · RHEOSTATS · RELAYS · CONTROL DEVICES

BREVITY—Identify by IEN - 2233 If you write the maker

NOW you can bend Thin-Wall Conduit profitably

Here's the efficient way to bend 1 1/4, 1 1/2 and 2" electro-metallic tubing. It's done with Blackhawk's remarkable all-directional "Porto-Power" hydraulic unit.

NEW *Controlled-Roll* **BENDING SHOES**
create kinkless, wrinkle-free bends, matched offsets

There's no crushing. You get 90° bends in just one setting. Remote-operation permits bending on the bench or floor—in the most convenient position for handling, sighting and measuring pipe.

ONLY *Porto-Power* **gives you these benefits**

The bending assembly for 1 1/2" conduit weighs only 50 lbs. This means easy handling . . . no wrestling with heavy, clumsy equipment. The equipment pays for itself on the first good job.

Write for free Bulletin No. 50B on Benders for both Rigid and Thin-Wall Conduit . . . plus spectacular HYDRAULIC Knock-Out Punches. See leading wholesalers or write Blackhawk Mfg. Co. Dept. P-1531 Milwaukee 2, Wis.

BLACKHAWK

BREVITY—Identify by IEN - 2234 if you write the maker

Make STANLEY your hinge source!

You just specify the hinge you want—Stanley does the rest, from first sketch to finished product.

Stanley gives you the advantage of expert designers and production engineers—complete research and tool-making facilities—the particular plating and finish best suited to your needs.

As the world's largest producer of hinges, Stanley is geared for efficient production to meet your requirements. Write for full information—not only on special hinges but drawings and stampings as well—now!

PRESSED METAL DIVISION . . . THE STANLEY WORKS, New Britain, Conn.

New York • Chicago • Detroit
San Francisco • Los Angeles • Seattle

BREVITY—Identify by IEN - 2235 if you write the maker

Seal Pipe Joints with KEY-TITE WATER PROOF PIPE JOINT COMPOUND

Stops Needless Waste

Pipe joints sealed with Key-Tite cannot leak. Key-Tite is a perfect seal on all lines carrying water, gas, low-pressure steam, compressed air, etc. It contains no lead or substitutes and does not affect the taste or odor of potable liquids. Joints are easily opened, too, for it will not freeze in the joint. Stop losing money through leaky pipe joints . . . seal with Key-Tite.

Send for Free Sample
Try Key-Tite in Your Own Plant at Our Expense

KEY Company

KEY COMPANY
2651 McCausland Ave., East St. Louis, Ill.

BREVITY—Identify by IEN - 2236 if you write the maker

Reduce Machine Noise and Vibration 60%-85%!

ANCHOR MACHINES ON UNISORB®

Yes, and UNISORB machine-mounting requires no bolts . . . no lag screws . . . no destructive floor-drilling. It's the modern way to anchor machines . . . saves installation costs . . . lasts for years and years with no maintenance . . . easy to replace . . . prevents vibration damage to floors, buildings and machinery.

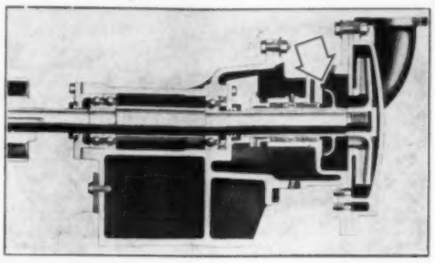
Today, write for your free copy of "Why It Pays To Anchor Your Machines with UNISORB."

The FELTERS Company
210-I SOUTH STREET
BOSTON 11, MASS.

BREVITY—Identify by IEN - 2237 if you write the maker

PUMPS . . Single stage centrifugal is protected against packing leakage

Source: ALLIS-CHALMERS MFG. CO.
909 S. 70th St., Milwaukee 14, Wis.



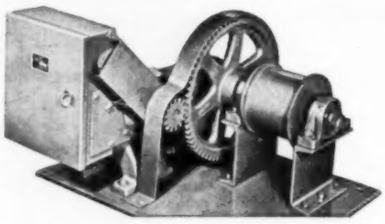
Equiseal trade names a new sleeve. The company is prepared to supply it for the Type-P and Type-PD centrifugal process pumps with suction head to 15 ft. at 1,750 rpm. or 6 ft. at 1,150 rpm. Four sizes in the pump line are available with 2by 1½-in. to 6 by 4-in. suction and outlet. Each is available in base mounting for motor or belt drive or as the bare pump as shown in the section illustration.

The new sleeve extends through the packing box and carries a set of radial vanes in the position shown by the arrow. These vanes create a force that equalizes suction pressure, in cases where the pump is operating on suction pressure above atmospheric. They produce atmospheric pressure on the pressure side of the stuffing box to prevent tendency for liquid flow through the packing to the outside. The design can prevent leakage even when handling liquids that are viscous or have solids in suspension.

BREVITY—Identify by IEN - 2238 if you write the maker

WINCH . . Motor drive assembly, ¼ to 1 ton, takes 50-ft. wire rope

Source: J. R. CLANCY INC.
Belden Ave. & Edison, Syracuse 4, N. Y.



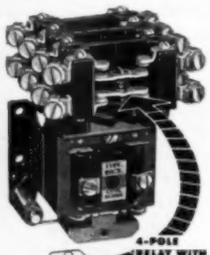
Series 800 designates motor-driven winch, initially designed for use on theater stages, now available for general industrial application in four load ratings between ¼ and 1 ton. Standard construction takes 50-ft. of ⅜ in. wire rope on the winch drum. The transmission includes a worm-gear reducer that will not overhaul under loads within rated capacity. The drum shaft is mounted on Timken roller bearings.

The motor is available in standard or special voltage and is controlled by a reversing magnetic starter with overload protection. A start-stop-reverse push button can be specified. Limit switches prevent over-travel.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 89

BREVITY—Identify by IEN - 2239 if you write the maker

Bulletin 700 UNIVERSAL SOLENOID RELAY



4-POLE RELAY WITH UNIVERSAL CONTACTS

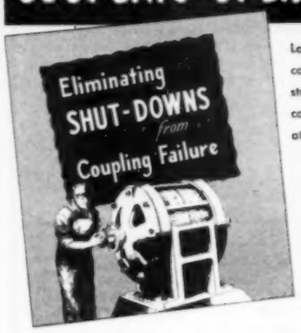
Change from NORMALLY OPEN Contacts to NORMALLY CLOSED Contacts by Simply Shifting Connections

The Allen-Bradley Bulletin 700 universal solenoid relays are a new idea in relay design. The new dual contact arrangement permits quick change from normally open contacts to normally closed contacts by simply shifting connections . . . a simple and easy operation. Only ONE moving part. Rating of 10 amperes at voltages up to 600 volts. Allen-Bradley Co., 1312 S. Second St., Milwaukee 4, Wisconsin.

ALLEN-BRADLEY
QUALITY
MOTOR CONTROL

BREVITY—Identify by IEN - 2240 if you write the maker

WANT LONG, TROUBLE-FREE COUPLING OPERATION?



Look for the features in coupling design and construction that eliminate common sources of operating difficulties.

Write for your copy

of this new folder which explains in detail the coupling features that provide added insurance against coupling failure. It contains helpful information that will prove highly useful in selecting a coupling for longer trouble-free operation. A copy of this folder will be sent promptly on request.

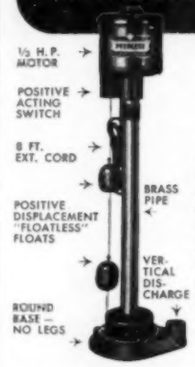
WRITE TO

JOHN WALDRON CORPORATION
New Brunswick, New Jersey
Sales Representatives in Principal Cities.

BREVITY—Identify by IEN - 2241 if you write the maker

PEERLESS AUTOMATIC SUMP PUMP

UNIQUE FLOATLESS SWITCH ASSURES DEPENDABLE OPERATION WITHOUT WATERLOGGING OR FLOAT RODS



PEERLESS PUMPS

FOR SUMPS UP TO 24", MOTOR ½ H.P.
CAPACITIES UP TO 2600 GALS. PER HR.

Pump base, screen, volute and impeller are all bronze. Impeller is non-clog open type. "Floatless" float switch action assures automatic operation. Discharge outlet is vertical requiring no extra fittings to connect discharge pipe. Top suction assures clean shaft bearing. Rotating shaft is stainless steel. Easily adjustable to varied limits of sump liquid level.

WRITE FOR BULLETIN B-2520.

PEERLESS PUMP DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION
Factories: Los Angeles, California, and Indianapolis, Indiana.
Offices: New York, Atlanta, Fresno, Los Angeles, Chicago, St. Louis, Phoenix; Dallas, Plainview and Lubbock, Texas; Albuquerque, New Mexico.

BREVITY—Identify by IEN - 2242 if you write the maker

MORE SPEED MORE SUPPORT

BALL-BEARING BAND-SAW GUIDES

ALL STEEL
STRONG • STURDY

PADDOCK BALL-BEARING BAND-SAW GUIDES are the answer to faster band-saw production—greater safety to operators—cutting down saw-blade breakage. Ball-Bearing wheels (inter-changeable) running with the blade give strong, friction-free support. Hold working portion of blade as if in a frame. Very reasonably priced—will last for years. IMMEDIATE DELIVERY. Write for circular and price.

PADDOCK TOOL COMPANY
Guide Makers Since 1920
1418 Walnut St., Kansas City 6, Mo.

Paddock
BALL-BEARING
BAND SAW GUIDES

BREVITY—Identify by IEN - 2243 If you write the maker

AMAZING, NEW, WATERPROOF, GLASS-REINFORCED PAPER

GLAS-KRAFT

PROVIDES POSITIVE ALL-WEATHER PROTECTION

GLAS-KRAFT is one of the strongest, toughest, most flexible, reinforced papers known. It is the most waterproof reinforced paper available. Contains up to 315 ft. of continuous, specially treated glass yarns swirled into each square foot for all-directional reinforcement. Yarns are waterproof-bonded under heat and pressure between two plies of finest specification Kraft.

Glas-Kraft is supplied to the U.S. Government in quantity. It meets JAN-P-125 specifications for barrier wrapping material, Types E-1, E-2, E-3.

GLAS-KRAFT IS VERSATILE

- *Wrapping & Packaging*—Textiles, Machinery, Tires, Paper, Steels, Wire Stock, Cement, Chemicals, Furniture, etc.
- *Storage*—Indoor or Outdoor storage of motors, vehicles, machinery, building supplies and equipment . . . As temporary all-weather tarpaulins.
- *Packing & Shipping*—Unitized loading of freight cars . . . As case liners and shrouds for export and domestic shipping.
- *Building & Construction*—As a vapor barrier on side-wall sheathing, protective floor covering, or over subfill.
- *Concrete Curing*—For concrete floors, driveways, sidewalks and roads.

GET GLAS-KRAFT

Investigate Glas-Kraft when you want an industrial paper to perform where others fail. Available in rolls up to 96 inches in width. Three grades. We also manufacture the revolutionary new Glas-Tape and Glas-Kraft Sealing tape for the corrugated container industry.

A Better Paper Product By

GLAS-KRAFT, Inc.
LONSDALE, RHODE ISLAND

Write today for sample swatches and prices.

BREVITY—Identify by IEN - 2244 If you write the maker

ALL-AROUND ELECTRIC FURNACE

TEMCO

SERIES 1600 . . . for heat treating tools, dies, parts and general laboratory work

A husky bench-type electric furnace built for continuous use up to 1650° F., intermittent to 1900° F.

Welded steel body 4½" dual insulation. Fast heating, long-life, embedded elements surround heating chamber. Up-lifting door for safe, easy operation.

Two chamber sizes: 5½" x 4½" x 9" or 5½" x 4½" x 13½". Supplied without controls or with either TEMCOMETER stepless temperature controller and indicator, or precision electronic controlling pyrometer. Write for new handy Reference File and dealer's name.

THERMO ELECTRIC MANUFACTURING CO.
482 Huff St., Dubuque, Iowa.

BREVITY—Identify by IEN - 2245 If you write the maker

RAMSCO

BALL BEARING SWIVEL FITTINGS

THAT ARE REALLY FREE TURNING

FOR LIQUIDS, GASES, PROPANE, HOT ASPHALT, STEAM, ACIDS AND OTHER CHEMICALS

For oil refineries, chemical plants, processing, pipelines, drilling, truck and tank car loading racks. Individual joints or multi-joint flexible steel hose, RAMSCO's patented method of packing offers proven dependability for continuous or occasional rotation service.

360° FREE ROTATION—1, 2 AND 3 PLANES

Your particular piping problems solved. You name it—we have it. Over 500 sizes, types, styles. Sizes: ¼" to 14" low pressure; ⅜" to 6" high pressure. Corrosive service or steam fittings 1000 psi. and temp. to 750° F., asbestos or Teflon packed. Low pressure fittings to 1000 psi. and temp. to 225° F. High pressure fittings to 15,000 psi. and temp. to 225° F. Gear driven types available.

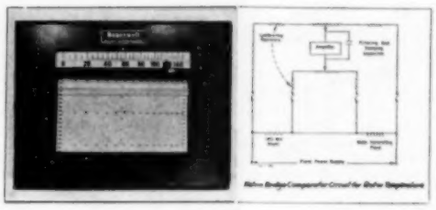
Send for complete catalog and prices. State kind of service, pressure, temperature, pipe size and indicate style below, threaded, flanged or weld ends.

RASMUSSEN MFG. CO.
RAMSCO
13303 INDUSTRIAL AVE.
HOLLYDALE, CALIFORNIA

BREVITY—Identify by IEN - 2246 If you write the maker

PYROMETER . . Electronic recorder measures generator rotor temperature

Source: BROWN INSTRUMENTS DIVISION
4456 Wayne Ave., Philadelphia 44, Pa.



Temperature is recorded by a pen on a 12-in. strip chart in this new ElectroniK recorder. Range is between 0 and 150 deg. C. Limit error is 1½ deg. C. Connection is to the rotor of a generator such as the large unit in a central station. The record of temperatures assist in avoiding dangerous overload and permits operation near peak capacity.

BREVITY—Identify by IEN - 2247 If you write the maker

ELECTRIC WIRE . . Plastic insulated, for radio and television hookups

Source: ROME CABLE CORP.
440 Ridge St., Rome, N. Y.

Ask for Bulletin TR-901

Synthinol 901 is a new tinned conductor wire with thermal plastic insulation plus a nylon sheath, or lacquered braid, for continuous operation at temperatures to 90 deg. C. It is available in eight sizes measuring .051 to .100 in. in outer diameter over a nylon sheath. The smallest includes tinned conductor size 24 AWG solid. Largest conductor size is 16 AWG 26/.010.

Characteristics are resistance to heat deformation and to aging as well as attack by oil, chemicals, grease, moisture and flame. Colors are clear and permanent.

BREVITY—Identify by IEN - 2248 If you write the maker

CLEANING . . Sand blast cabinet for dies, tools, small machine parts

Source: W. W. SLY MFG. CO.
4752 Train Ave., Cleveland 2, Ohio

New cabinet measures 14 by 17 in. and is designed to mount on a work bench. Connection is made to a compressed-air line and to a 110-volt lighting circuit to supply power to the two lamps and the exhaust blower mounted on the housing. The blower delivers into a dust bag at the rear.

Two rubber sleeves, one on each side, provide arm entrance for the operator. Each sleeve carries an attached rubber glove for operator's hands. Abrasive materials such as sand, metal, ground corn cob, and nut shells are directed through a nozzle to do the cleaning.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 60

BREVITY—Identify by IEN - 2249 If you write the maker

The "One Best Way" for Many Materials-Handling Jobs

MORRIS *Centrifugal* SLURRY PUMPS

Coal mines, cement mills, glass works, stone-cutting plants, ore-treating plants, and a large array of chemical plants have found Morris Centrifugal Slurry Pumps to be the "one best" solution to many of their difficult materials-handling problems. Particle size is the only limiting factor, and this can be much larger than you think. Even thick sludges and fluids with viscosities as high as 7,000 SSU flow smoothly through the pump, insuring long and economical life of the wearing parts.

Lower Cost Per Ton or Million Gallons

Power, labor and maintenance costs are outstandingly low when figured on a year-in-year-out basis. The accuracy of the complete Morris assembly, the smooth, vibration-free operation, and the remarkable wearability of parts, all give maximum value for the dollar invested. Ask our engineers about your special problems, or write for Bulletin No. 181.

MORRIS MACHINE WORKS
Baldwinsville, N. Y.
Branch Offices in Principal Cities

MORRIS CENTRIFUGAL PUMPS

BREVITY—Identify by IEN - 2250 If you write the maker

WESTERN "SUPER" with 8 SPEED CHANGES

For use on large lathes, boring, chemical and rubber machinery, etc., and used for replacement of gear boxes on large radial drills, Bullard vertical turret lathes, etc. CAPACITY 30 HP.

In geometric progression of 1.39 (total reduction of 4:1).

(left) "9000 series" has a 5 hp. capacity with input speed of 900 r.p.m. . . . 4 gear changes are available through one-shift-lever (automotive type). Ratios: 1:1, 2:1, 3:1, 4:1.

On special machines where transmissions are required — a standard WESTERN model can often be adapted to give the required spindle speeds . . . and even when modifications are made, a WESTERN for the basis of the design greatly simplifies the problem. Similar transmissions of 10 hp. capacity are available . . . We can supply the necessary V-belts, sheaves, output pulleys and motors from stock.

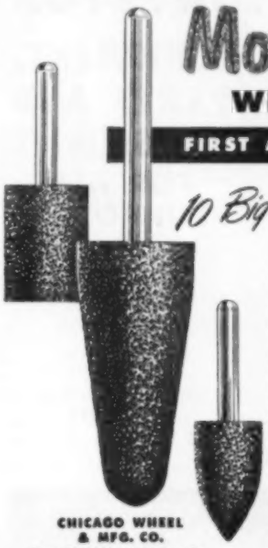
up to 50 h. p. **WESTERN TRANSMISSIONS**

BREVITY—Identify by IEN - 2251 If you write the maker

CHICAGO Mounted WHEELS

FIRST AND FINEST

10 Big Advantages



1. First in the Field — Unexcelled "Know-How"
2. Stronger Mandrels — Special Analysis Steel
3. Wheels Guaranteed to Remain on Mandrels
4. Constant Concentricity for Perfect Balance
5. Widest Variety of Sizes and Shapes
6. Strongest Construction for Longest Life
7. Greater Cutting Freedom — Faster Cutting Action
8. Better, Finer Finishes Positively Assured
9. Job-Engineered to Your Particular Requirements
10. Recommended by Skilled Mechanics and Craftsmen

CHICAGO WHEEL & MFG. CO.
Dept. H, 1101 W. Monroe St.
Chicago 7, Illinois

Free Sample Wheel

Give details of your operation. We'll supply correct sample. No obligation. Write for Free Catalog.

BREVITY—Identify by IEN - 2252 If you write the maker

STOP DUSTS

. . . from Any Dust Source

IMMEDIATELY . . . WITH DUSTKOP

Available from Stock . . . 22 Standard Models Pretested . . . 300 to 10,050 cfm.

for

Surface, Tool, Cutter Grinders; Polishers and Buffers; Abrasive Belts and Discs; Woodworking and Plastic Industry Equipment . . . DUSTKOPS collect almost *all* kinds of industrial dusts.

Ask for Catalog 605-2. Describe dust problem for recommendation by return mail—no obligation.

Aget-Detroit Co., 401 Main St., Ann Arbor, Mich.

That's a Model 1150; takes all the dust from two 18" wheels. Same unit would handle dust from 3 surface grinders.

BREVITY—Identify by IEN - 2253 if you write the maker

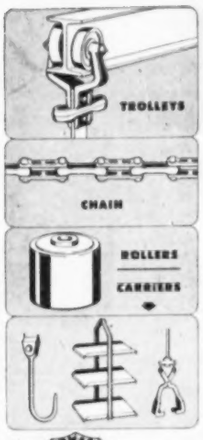
ROSS Introduces Poppet Valve
with Rotary Handle Action

- Seals with air pressure
- Easy to operate
- Smartly styled, clean and neat in appearance
- A 4-way unit available in ¼ and ⅜-inch pipe sizes

ROSS OPERATING VALVE COMPANY
120 E. GOLDEN GATE AVE., DETROIT 3, MICHIGAN

BREVITY—Identify by IEN - 2254 if you write the maker

WEBB CONVEYOR



EQUIPMENT, PARTS AND ACCESSORIES FOR ALL PURPOSES

ASK FOR CATALOGS
NO. 46 TROLLEY CONVEYORS
NO. 51 FLOOR TYPE CONVEYORS

JAMES WEBB COMPANY
OFFICES IN PRINCIPAL CITIES
8915 ALPINE AVE.
DETROIT 4, MICH.
MANUFACTURERS OF OVERHEAD AND FLOOR TYPE CONVEYORS

BREVITY—Identify by IEN - 2255 if you write the maker

CUTS 12 FEET 3/4 INCH STEEL PLATE

1. 30 strokes per minute.
2. Operated by electric foot switch.
3. Cuts by pivoted-blade principle.
4. Fast Micro-Set knife adjustment.
5. 36-inch throat permits slitting wide plate.
6. Lift-up type ball-bearing back gauge.
7. Heavy welded one-piece steel frame.

STEELWELD Pivoted Blade SHEARS CATALOG No. 2011

Send for free copy of catalog No. 2011.

THE CLEVELAND CRANE & ENGINEERING CO.
4230 East 282nd St., Wickliffe, O.

STEELWELD SHEARS

BREVITY—Identify by IEN - 2256 if you write the maker

TESTING . . Field strength meter to measure signals for television

Source: SIMPSON ELECTRIC CO.
5200 W. Kinzie St., Chicago 44, Ill.

Model 488 is a new meter with which to locate areas for best receipt of television signals, to set up antenna for correct orientation, for comparison of antenna, for adjustment of boosters and to check lead-in installations. It employs a 12-station tuner, provides four sensitivity ranges between 50 and 50,000 microvolts.

A phone jack permits audible testing. The meter on the housing face is a 4½-in. unit and can be read from a distance. Dimensions are 11 by 8 by 8½ inches. Weight is 11½ pounds. List price is $80.50.

BREVITY—Identify by IEN - 2257 if you write the maker

CLEANING . . Powdered material to apply with water on worker's hands

Source: WEST DISINFECTING CO.
42-18 West St., Long Island City 1, N. Y.

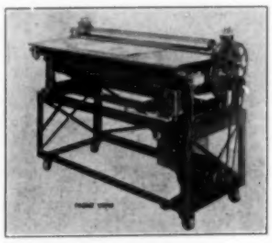
Powder dispenser to specification

Lecithin is a new component in the company's previously developed hand-cleaning powder known as Lan-O-Kleen. Detergency has been improved by the addition and the material has been stabilized in its foaming action. Application is with warm or cold water to remove industrial soil. Cleansing action is promoted by fine-grain corn-meal particles. It is particularly suited for women workers. Packaging is in 100-lb. lots and special 50-lb. containers.

BREVITY—Identify by IEN - 2258 if you write the maker

SPREADING . . Glue applying machine for flexible or rigid sheet to 46 inches

Source: POTDEVIN MACHINE CO.
1285 38th St., Brooklyn 18, N. Y.



Hot glue is lifted from an electrically-heated tank by a doctor roll and is spread over a work surface by a glue roll. Both rolls measure 6 in. in diameter to provide rigidity over the 46-in. work width. Electric elements are sealed into the removable tank, controlled thermostat.

The work is fed over a table to pass through the roll section at the rear. The machine will take work thickness to ⅜ inch. Amount of glue deposited can be adjusted. Operating speed is maximum at 100 fpm. by a variable-speed drive.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2259 if you write the maker

Tap #0 to ¾" with . . . 1

Commander TAPPER

The Commander Tapper's exclusive torque control thinks for its operator — automatically stops when taps are dull, overloaded or strike bottom in blind hole tapping.

You get maximum tap protection because the torque control can be set to protect all taps in the range from #0 to ¾".

Spring clutch drive eliminates slippage and wear — provides smooth, quiet, easy operation.

Commander Tappers are furnished to fit any drill press.

Write for illustrated circular and name of nearest DISTRIBUTOR

COMMANDER MFG. CO.
4219 W. KINZIE ST.
CHICAGO 24, ILL.

ANY OPERATOR DOES PRECISION TAPPING WITH A COMMANDER TAPPER

Product of *Commander* builder of the *Multi-Drill*

BREVITY—Identify by IEN - 2260 if you write the maker

. . . for Greater SAFETY COMFORT STYLE DURABILITY

Specify **CESCO** Safety Goggles

made in **3 EYE SIZES BRIDGE SIZES** TO FIT EVERY WORKER AND EVERY WORKING CONDITION

You can rely on CESCO Safety Goggles for:

- ★ Impact resistance
- ★ Shock-proof durable construction
- ★ Correct fit
- ★ Good looking, modern design
- ★ Simple lens replacement

for Information about CESCO's complete line of Safety Goggles see your CESCO distributor or write . . .

CHICAGO EYE SHIELD CO. • 2326 Warren Boulevard • Chicago 12, Illinois

CESCO FOR SAFETY

OFFICES IN Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Detroit, East Orange, Houston, Los Angeles, Montreal, Philadelphia, Pittsburgh, Seattle, St. Louis, St. Paul, Toledo, Tulsa

BREVITY—Identify by IEN - 2261 if you write the maker

For efficient heat transfer "Ro-Fin" Tubes

There are nearly 100 sizes of ROME EXTENDED SURFACE HELICAL FIN TUBING in production! Available in straight length, coils, or U-bends . . . with or without threaded end connections . . . or to be used with standard flare connections. "Ro-Fin" Tubes for efficient heat exchange are used and specified by nearly all large nationally known manufacturers!

For refrigeration condensers • fluid recovery condensers • diesel engine cooling • concealed radiation convectors • steam condensers • fan-type unit heaters • all heat transfer work

Write for information on your heat transfer problems:

ROME
TURNEY RADIATOR COMPANY

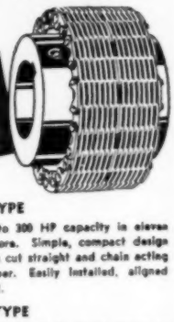
200 East Front Street • Rome, New York

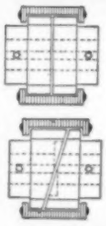
BREVITY—Identify by IEN - 2262 if you write the maker

TWO TYPES

FOR LIGHT AND HEAVY DUTY

RAMSEY FLEXIBLE COUPLING





STRAIGHT TYPE

For light loads to 300 HP capacity in eleven sizes from ½" bore. Simple, compact design with steel pinions cut straight and chain acting as flexing member. Easily installed, aligned and disconnected.

DIAGONAL TYPE

For loads up to 600 HP in speed ranges to 3600 R.P.M. In ten sizes from ½" bore. Rugged design and construction features steel pinions cut diagonally to allow use of full width of chain under tension.

Write Today for "THE COUPLING BULLETIN"

SILENT CHAIN DRIVES—FLEXIBLE COUPLINGS

RAMSEY CHAIN COMPANY, INC.
5132 BROADWAY • ALBANY, N. Y.

▼ BREVITY—Identify by IEN - 2263 if you write the maker ▼

COBURN FIRE DOOR HARDWARE

Metal clad or Kalamine doors, installed with Coburn Fire Door Hardware, reduce fire hazards, and lower insurance rates.

Coburn Fire Door Hardware is made to specifications of The National Board of Fire Underwriters and, where necessary, bear the U. L. I. label. Special sets available for single and double incline or level slide doors; single and double swing doors; vertically operated doors. All equipped with automatic self-closing devices. Write for catalog #210 showing full line of hardware, charts showing required headroom; wall space and other information.

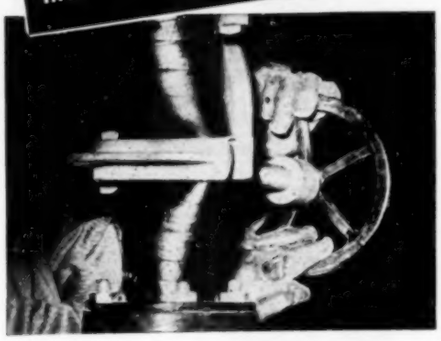
Engineering help available without obligation.

COBURN PRODUCTS CF&I

A PRODUCT OF WICKWIRE SPENCER STEEL DIVISION OF THE COLORADO FUEL & IRON CORPORATION
Sales Engineering: 56 Sterling Street, Clinton, Massachusetts
Executive Office: 500 Fifth Avenue, New York 18, New York
Sales Offices: Atlanta • Boston • Buffalo • Chicago • Denver • Detroit • Philadelphia
Pacific Coast — The California Wire Cloth Corporation, Oakland 6, California

▼ BREVITY—Identify by IEN - 2264 if you write the maker ▼

Better rubber products are made with Du Pont NEOPRENE



Pinch valve with reinforced neoprene body handles difficult line materials . . . cuts maintenance costs

For over *15 years* this durable pinch valve has been handling fine powder in a chemical plant—and it's still going strong. The valve was designed for use in lines carrying hard to handle abrasive or corrosive mixtures. That's why neoprene was used for its body—the valve's most vital part.

Neoprene withstands all the punishment destructive materials can hand out. And neoprene's resistance to abrasion and deterioration from contact with oil, gasoline, many chemicals and acids means longer life, less maintenance, and more efficient performance.

A wide variety of rubber products for every industrial application are made with Du Pont neoprene. Its remarkable combination of excellent properties makes it the choice of foremost rubber manufacturers for their highest quality products. While Du Pont makes no finished products of neoprene, your rubber goods manufacturer or distributor will gladly tell you about neoprene products he supplies.

FREE! THE NEOPRENE NOTEBOOK

Full of interesting stories. New, unusual applications of neoprene to build new products . . . improve old products . . . reduce maintenance costs. Write today for your free subscription. E. I. du Pont de Nemours & Co. (Inc.), Rubber Chemicals Division D-3, Wilmington 98, Delaware.

Tune in "Cavalcade of America" Tuesday nights—NBC coast to coast

NEOPRENE

The rubber made by Du Pont since 1932

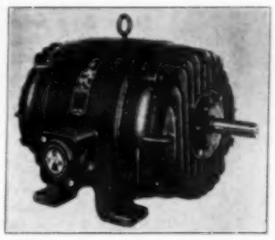
DU PONT

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

▼ BREVITY—Identify by IEN - 2266 if you write the maker ▼

MOTOR . . Squirrel cage induction, enclosed, non-ventilated, 5 and 7½ hp.

Source: FAIRBANKS MORSE & CO.
606 S. Michigan Ave., Chicago 5, Ill.



Dirt, dust, lint, metal turnings, sand cannot enter this new totally-enclosed non-ventilated motor. It has been added in two sizes of 5 hp. at 1,200 rpm. and 7½ hp. at 1,800 rpm. to the companys Type-QZE line of squirrel-cage induction units. The designs conform to NEMA and ASA standard for totally-enclosed motors. Mounting dimensions are identical with the standard totally-enclosed fan-cooled design of the same ratings.

▼ BREVITY—Identify by IEN - 2267 if you write the maker ▼

HANDLING . . Stainless steel tongs to handle crucibles in a laboratory

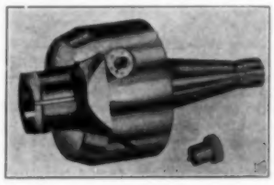
Source: FISHER SCIENTIFIC CO.
715-19 Forbes St., Pittsburgh 19, Pa.

List price is $3.50 each or $37.80 per doz. for this new Jumbo laboratory tong. It is made of stainless steel, is pivoted on a spun rivet at a flat joint. Overall length is about 21 inches. The patented handle provides a separate grip for the operator's thumb and one finger.

▼ BREVITY—Identify by IEN - 2268 if you write the maker ▼

BORING . . Adjustable head, maximum diameter capacity to 4½ in.

Source: EVEREDE TOOL CO.
2002 N. Parkside Ave., Chicago 39, Ill.



No. 3-50 is a new size in the company's line of adjustable boring heads. It lies between previously developed larger and smaller sizes, measures 3 11/16 in. in body diameter, is fitted with a standard taper shank to specification. Adjustment centers at a dial-equipped screw on the side of the head. This screw is turned to move the dovetail slide in the body ways. A knurled nut is employed for the turning action. The setting is locked when the nut is removed. An extension attachment can be supplied to make maximum capacity 9 in. in diameter.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 2269 if you write the maker ▼

...You Get Exclusive Extra-Wear Features in

New Heavy-Duty PIONEER STANZOIL® BLACK NEOPRENE

Coated Canvas Gloves

Exclusive PIONEER Non-Slip Grip Holds wet things as if dry.

Curved Fingers Extra comfort and efficiency.

Preflex Palm Design Prevents wear from bunching.

Inserted Thumb Design No inside seam to wear through quickly.

Heavy Black Neoprene Coating Liquid resistant, durable.

Glove is full weight 8 oz. canton flannel Comfort, long wear.

Those six features mean far more glove service for your money. Heavy-Duty STANZOILS not only wear and wear on heavy-duty jobs, but give real hand protection, extra resistance to oils and acids. And they enable workers to do more work with less effort. Write today for information and prices on this line of Heavy-Duty STANZOIL DuPont neoprene coated canvas gloves. *The Pioneer Rubber Company, 635 Tiffin Road, Willard, Ohio.*

STANZOIL PIONEER

OVER 30 Years OF QUALITY GLOVE MAKING

▼ BREVITY—Identify by IEN - 2270 if you write the maker ▼

SQUARE D's DESIGN LEADERSHIP SAFETY SWITCHES

Types A*, C, and D...30, 60, 100, 200 Amp. Sizes

40 years' design leadership is reflected in the many design and operating features of this completely new line. **Type A** switches have full cover interlock, visible blades and magnetic arc plates as well as a quick-make and break mechanism, dead front line terminals, positive pressure jaws and fuse clips, silver plated current carrying parts and removable pressure connectors.

**Types C and D resemble Type A in appearance but differ in construction details.*

Write for Bulletin 3100 which gives complete details. Address Square D Company, 6060 Rivard St., Detroit 11, Mich.

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

DETROIT • MILWAUKEE • LOS ANGELES

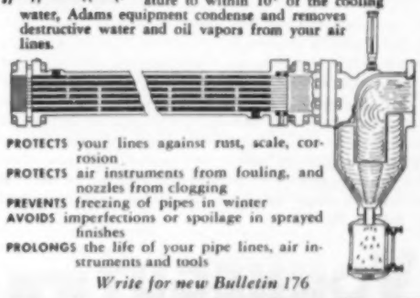
▼ BREVITY—Identify by IEN - 2271 if you write the maker ▼

You Can be Sure of Clean Dry Air for your Compressed Air Tools

3500 Gallons 1 YEAR'S water extraction from air lines equipped with Adams Aftercooler and Cyclone Separator.

with ADAMS Aftercooler and Cyclone Separator

• Reducing compressed air temperature to within 10° of the cooling water, Adams equipment condense and removes destructive water and oil vapors from your air lines.



PROTECTS your lines against rust, scale, corrosion
PROTECTS air instruments from fouling, and nozzles from clogging
PREVENTS freezing of pipes in winter
AVOIDS imperfections or spoilage in sprayed finishes
PROLONGS the life of your pipe lines, air instruments and tools

Write for new Bulletin 176

R. P. ADAMS CO., INC. 219 E. PARK DRIVE BUFFALO 17, N. Y.

▼ BREVITY—Identify by IEN - 2272 if you write the maker ▼

SELF-SUPPORTING AERIAL CABLE

Industrial plants everywhere are learning the dependable, low-cost advantages of Okolite-Okoprene self-supporting aerial cable.

Installation is compact, streamlined and neat appearing; reduces clearance problems and wiring congestion. Maintenance costs are considerably less than for open wiring, with a corresponding decrease in outages and service interruptions. The dangers of open wiring are completely eliminated.

When taps are required, patented Dualay assembly permits ample separation of insulated conductors without cutting the conductors or performing any operation on the messenger.

Long-life features of the cable itself are: Okoloy conductor coating . . . Semicon tape on cables operated above 2000 volts to increase safety factor . . . time-proved Okolite insulation . . . tough Okoprene protective covering—highly resistant to heat, moisture, sunlight, oils, acids and chemical fumes.

Bulletin IE-2077 gives details of a typical installation. For a copy, write The Okonite Company, Passaic, N. J.

THE BEST CABLE IS YOUR BEST POLICY

OKONITE insulated wires and cables

9946

BREVITY—Identify by IEN - 2273 if you write the maker

SYNTRON

"Vibrating"

TEST SIEVE SHAKERS

Eliminate all guesswork.

Provide definite sizing of test samples.

Use standard 8" Screen Scale Testing Sieves.

Controlled electromagnetic vibration — no motors, belts, pulleys, etc.

A reset timer for accurately timed test periods.

110 volt, 60 cycle operation (220 volt to order).

Write for Catalog Data

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

BREVITY—Identify by IEN - 2274 if you write the maker

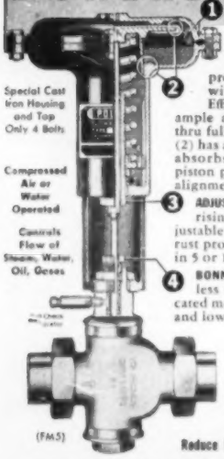
FOR THE FINISHING TOUCH

You can't beat this new 6-60 Vonnegut Abrasive Belt Grinding and Polishing Machine for cutting weld seams and burrs, removing finish blemishes, etc. Weighs only 100 pounds. Rugged . . . and well balanced . . . easily manipulated when arranged as a *swing machine*. It also can be supplied as a *floor stand* or as a *lathe attachment*. Because of its great versatility, the machine has proved its value for "special" applications too — and it may suggest an entirely new application in your plant. If so, write us about it — we'll be glad to help you solve the problem and supply the details for efficient production. Send for Bulletin No. 62.

VONNEGUT MOULDER CORPORATION
1827 MADISON AVENUE • INDIANAPOLIS 25, INDIANA

BREVITY—Identify by IEN - 2275 if you write the maker

Get BETTER Control with POWERS FLOWRITE VALVES



1 **VALVE TOP**—Durable moulded neoprene diaphragm (1) has positive sealing bead which provides increased sealing action with increasing control pressure. Efficient diaphragm form insures ample and constant operating power thru full travel. Piston Plate Assembly (2) has a free floating thrust plate which absorbs side thrust. Closely guided piston plate maintains stem in accurate alignment.

3 **ADJUSTING SCREW**—Ball bearing non-rising type with starting pressure adjustable from 0 to 17 psi. Has enclosed rust proofed steel spring for full travel in 5 or 10 psi. control pressure change.

4 **BONNET ASSEMBLY**—Polished stainless steel stem in preformed lubricated metallic packing insures long life and low hysteresis.

VARIETY of VALVE BODIES
Sizes ½" thru 8"
For line pressures below 250 psi. Rugged construction to withstand piping strains.
Write for Circular FMV

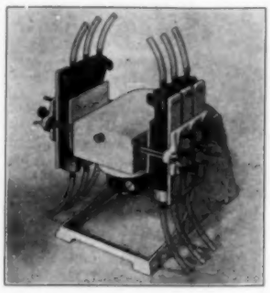
Reduce Maintenance with FLOWRITE VALVES

THE POWERS REGULATOR COMPANY
2737 Greenview Avenue, Chicago 14, Illinois
Established 1891 • Offices Over 50 Cities • See Your Phone Book

BREVITY—Identify by IEN - 2276 if you write the maker

PUMP . . Compression plate unit maintains flow through resilient tubes

Source: BROSITES MACHINE CO.
50 Church St., Room 1366, New York 7, N. Y.



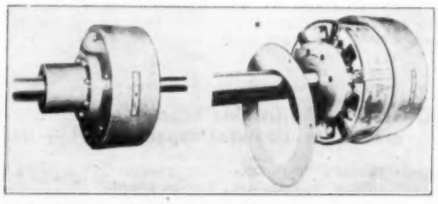
Motor drive head in the center of this new Model-O Mump pump reciprocates two plates in horizontal direction to alternately compress and release three resilient tubes on each side of the assembly. These tubes are backed by individually adjustable plates so the amount of compression can be registered for any desired delivery between 0 and 500 cubic centimeters per minute for each individual tube.

Inlet and outlet valves are located in the top and bottom. They can be specified as ball design or rubber flap type and of materials for a given service. The tubes themselves are made of gum rubber and have sufficient resilience to return to round section for operation against a considerable suction head after they have been compressed. Individual flow streams can be set up or any number of the six tubes can be connected for combined action. The motor rates 1/20 hp., operates on 110-volt single-phase ac.

BREVITY—Identify by IEN - 2277 if you write the maker

DRIVE . . Centrifugal clutch rating ½ to 410 hp. at 500 rpm.

Source: CENTRIC CLUTCH CO.
20-24 South Ave. W., Cranford, N. J.



The driving spider in this new Type-AVL design of the company's centrifugal clutch slides back over the driving hub far enough to clear the driven half of the assembly. The new arrangement permits either member to be lifted vertically clear of the other for assembly and disassembly without requiring end movement of the connected equipment. The clutch is particularly suited for use in dual drives on foundation-mounted blowers, generators, pumps.

Nine sizes in the new design, between 6 by 2 in. and 24 by 8 in., rate ½ to 410 hp. at 500 rpm. Construction can be specified with lead-weighted shoes or with spring retracted shoes. In both cases the shoes are confined in rotating direction by the driving member. They move outward by centrifugal force when the drive is started to make driving contact with their friction faces and the driven member at a preselected speed. The company will advise on application.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 88

BREVITY—Identify by IEN - 2278 if you write the maker

AIR-LIFT LIGHTENS LOAD for LAUNDRY WORKERS . . .

NOPAK . . .
Air Cylinder Reduces Fatigue, Speeds Production, Cuts Costs!

By proper application of a NOPAK Model E Air Cylinder, the National Marking Machine Co. has made its Damp Net Lift a real labor-saving device. It makes the former heavy task of handling damp bundles light, quick and simple; does away with "back-breaking" labor, speeds up work, reduces shakeout costs.

The proper application of NOPAK Valves and Cylinders can improve the performance of equipment that you build or use . . . for production, maintenance, or material handling.

GALLAND-HENNING MFG. CO.
2700 S. 31st St., Milwaukee 46, Wis.

Write for Bulletin SW-1 or refer to Sweet's File for Product Designers.

Representatives in Principal Cities

NOPAK VALVES AND CYLINDERS
DESIGNED for AIR and HYDRAULIC SERVICE

A 5875-1/0-AA

BREVITY—Identify by IEN - 2279 if you write the maker

Nutting FLOOR TRUCKS WHEELS CASTERS

Here are two veterans of the Nutting line — proven resourceful and tough for faster material handling. These easy rolling, well balanced trucks get the job done right—on time! Your men will like to work with them—and their cost per year is hardly visible.

Fig. 16—No. 24
Steel-bound hardwood frame, extra heavy axle.

Fig. 1136
Non-Tilting Bar Handle Truck
Capacity 2500-300 lbs. A proven veteran for all-round service. Pressure-lubricated roller bearing wheels. Range of sizes.

Write for Bulletin 49-C

Nutting makes everything in floor trucks, wheels, casters. Representatives in principal cities.

See your classified telephone directory or write direct to

our 60th year **NUTTING TRUCK AND CASTER COMPANY**
2012 DIVISION STREET, FARIBAULT, MINNESOTA

BREVITY—Identify by IEN - 2280 if you write the maker

Here's LOW-COST Protection against HIGH-COST Damage and Contamination

Here's the way to safeguard tubing, threading and other delicate parts from contamination and injury during processing and handling—with inexpensive, easily applied G-E sealing caps, tubes and sleeves.

Tough G-E plastics seals keep dirt and moisture from refrigerator piping . . . protect equipment from chemicals in plating solutions . . . make valves tamper-proof. And, because they have good dielectric properties, they are used as *insulation* for small parts.

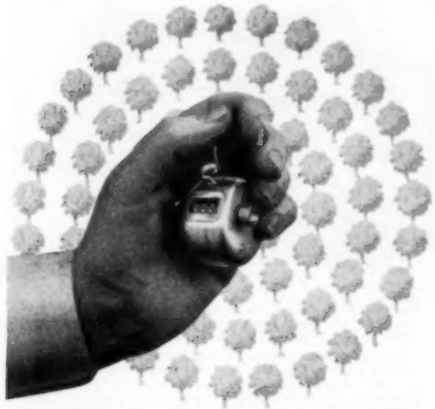
To use, simply expand G-E plastics seals in the dilating solution, apply—and they quickly shrink at room temperature to provide a tightly fitting seal. Stable under heat, they withstand conventional high temperature baking cycles. Write today for details. Address: Section G-1, General Electric Company, Chemical Department, Pittsfield, Massachusetts.

G-E SEALING CAPS, TUBES and SLEEVES

You can put your confidence in

GENERAL ELECTRIC

BREVITY—Identify by IEN - 2282 If you write the maker



Like Everything Else, These Are Counted By

VEEDER-ROOT COUNTERS

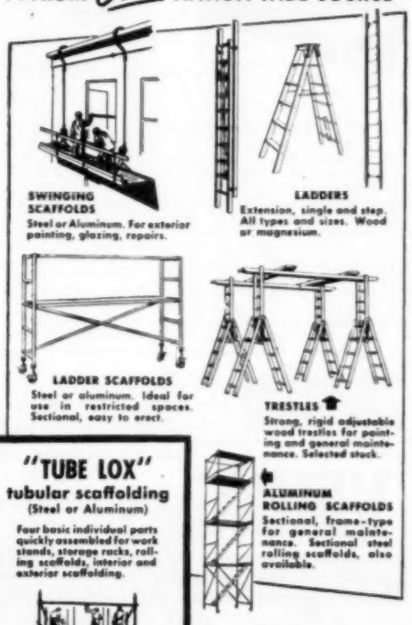
Name it and you can count it . . . trees, cars, people . . . and many other units that are difficult to count in any other way than with a Veeder-Root Hand Tally . . . on which you simply press the thumb-lever once for each count. And in addition, there are many other Veeder-Root Counters which count mechanically and electrically in any terms or units you want. But if you want to count up to a *real* payoff, then build V-R Counters into your product.

VEEDER-ROOT INC., Hartford 2, Conn.

BREVITY—Identify by IEN - 2283 If you write the maker

Select the Ladder or Scaffold *Best* for YOUR Job!

. . . FROM *One* NATION-WIDE SOURCE



"TUBE LOX"
tubular scaffolding
(Steel or Aluminum)

Four basic individual parts quickly assembled for work stands, storage racks, rolling scaffolds, interior and exterior scaffolding.

● You save time and money and simplify the selection and delivery of top-quality equipment when you specify "Gold Medal" Ladders and Scaffolds. Made of the finest materials by experienced workers — backed by the *oldest* manufacturers of off-the-ground work equipment —quickly available through a nation-wide network of branch offices or distributors.

Write for your free bulletins showing how these and other "Gold Medal" products are used in industrial plants throughout the country.

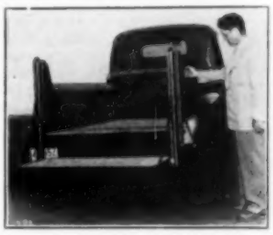
Ladders and Scaffolds for Any Purpose—Any Place—Any Time

Gold Medal LADDERS SCAFFOLDS — For Greater Safety...Efficiency...Economy
THE PATENT SCAFFOLDING CO., Inc
38-21 12th Street, Dept. IEN ● Long Island City 1, N. Y.
See Your Classified Telephone Directory for Nearest Office

BREVITY—Identify by IEN - 2285 If you write the maker

ELEVATOR . . Hand hydraulic gate for truck, lifts and lowers 650 pounds

Source: STRATTON EQUIPMENT CO.
1948 Hanna Bldg., Dept. I, Cleveland 5, Ohio



Hydra - Loader Model TG is a new end gate for use on pickup trucks. It mounts at the rear of a standard truck in place of the regular tail gate and employs a hand-operated pump for lifting and lowering movements. About 25 double strokes of the pump handle will raise the gate through 30 inches. Maximum lift is 31 inches. Upright height above the truck bed is 32 inches. Width is 59 inches. The gate lowers to a position 15 in. above ground. Platform dimensions are 24 by 54 inches.

The platform is wheel equipped and rides in guide ways and is supported by steel cables riding over oil-impregnated sheaves at the top of the uprights and then down to a hydraulic cylinder that is powered by the pump. A tank for the hydraulic oil, the pump and a lowering valve are built as a single unit. The platform can be adjusted by its chains and raised to close the back of the body in carrying position. Assembly weight is 210 pounds.

BREVITY—Identify by IEN - 2286 If you write the maker

LUBRICATING . . Mineral oil is resistant to both heat and cold

Source: SPOTOIL DISTRIBUTORS INC.
131-35 S. E. Madison St., Portland 14, Ore.

Packaged in pints to 55-gal. drums

Spotoil trade names new mineral oil with excellent penetrating properties and ability to lubricate in automotive equipment and in similar services in a temperature range between minus 50 and plus 600 deg. F. The oil has been on the market for some time in Portland, Oregon, and vicinity. It is now offered on a national basis as a special lubricant.

BREVITY—Identify by IEN - 2287 If you write the maker

HANDLING . . Molded rubber pail to handle corrosive liquids, to 3 gal.

Source: HANSON-VAN WINKLE-MUNNING CO.
10 Filbag St., Matawan, N. J.

Rubber compound employed in the construction of this new pail is slightly flexible but tough. The pail is equipped with a lead-coated stainless-steel ball-type handle carrying a hard-rubber grip. The handle is molded in place to move freely in cast-lead bearings. A safety grip at the side near the bottom provides for a firm hold when pouring. Graduated markings on the inside indicate 1 to 12 qt. and 1 to 3 gallons.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

BREVITY—Identify by IEN - 2288 If you write the maker

McDonald

SAFETY BELTS

☆ **LIGHTWEIGHT!** Both belts pictured here are lightweight for added working comfort and safety. Yet they are exceptionally durable under hard use.

☆ **WIDE ADJUSTABILITY!** Belts are quickly and easily adjustable from 28" to 48". They are manufactured to finest quality specifications.

☆ **TYPE "S"**—Quick Cast Off Derrickman's Belt. (Pictured far left.) Wearer may free himself instantly. Weighs 1 lb., 10 oz. 3" body pad—D ring always stays in same relative position.

☆ **TYPE "R"**—Derrickman's Belt. A well-made, sturdy belt. Weighs only 1 lb., 13 oz. Adjusts easily. (Shown at left.)

Write for circular on complete line of belts!

B. F. McDONALD CO.
Manufacturers & Distributors of Industrial Safety Equipment
5721 WEST 96TH ST., LOS ANGELES 45, CALIF.
Other Offices in San Francisco & Houston

BREVITY—Identify by IEN - 2289 If you write the maker

INDUSTRIAL INKS To Mark Anything!

Production engineers use "Clear Print" Wood Block Stamp Pads and Opaque Inks for the best clear, sharp, fast drying impressions. To cut down on lost shipments and rejected assemblies because of poor identification, use "Clear Print" for shipping room direction stamps and parts numbers. You are assured of permanently legible markings. Many bright visible colors available.

- For marking on non-porous materials such as:
- WOOD, METAL, GLASS, PLASTIC, RUBBER, PAPER AND MANY OTHERS.

BREVITY—Identify by IEN - 2290 If you write the maker

QUALITY PLUS

...the secret of FEDERAL'S high standing among metalworkers!

Throughout the industry the name FEDERAL stands for quality *plus*. Built into every FEDERAL PRESS this extra quality includes such features as Timken Bearings, oversized crankshafts, solid web-tight flywheels, symmetrical rams, longer "V" ways and gibs. The FEDERAL standard of workmanship can be seen in the *easy operation*, the *absence of down time*, the *longer life*. Get this *extra* quality when you next buy.

No. 6—Geared type. 65-ton capacity.

Write for catalog showing the complete line — 4 to 80 tons.

FEDERAL PRESS COMPANY 800 Division St. Elkhart, Indiana

FEDERAL *Gear Driven Toggle* **PRESSES**
25 YEARS OF QUALITY CONSTRUCTION

BREVITY—Identify by IEN - 2291 If you write the maker

The mark of quality and lower chain costs

This Registration Ring bears the chain's serial number. It's your assurance of thorough testing and inspection before shipment.

TM Alloy Steel Chain is quickly identified by the drop forged registration ring bearing the chain's serial number. It's your assurance of premium quality chain — chain that's tougher, harder and twice as strong as wrought iron chain — chain that never requires annealing — chain that is highly resistant to shock, grain growth and work-hardness at all temperatures. You gain lower chain costs — lower accident rates with TM Alloy Steel Chain. Call your mill supply house today or send coupon.

S. G. TAYLOR CHAIN CO., HAMMOND, IND.

TAYLOR MADE A GREAT NAME IN *Chain* SINCE 1873

S. G. TAYLOR CHAIN COMPANY
Dept. 4, Hammond, Indiana
Rush details on TM Alloy Steel Chain.
Name.....
Address.....

BREVITY—Identify by IEN - 2292 if you write the maker

FOR TESTING FABRICS THAT MUST HOLD GAS

The Cambridge Fabric Permeameter is an accurate, rugged and convenient instrument for production testing of the permeability of fabrics which are to be inflated with Hydrogen, Helium, Carbon Dioxide, etc.

The rate of permeation through the fabric is quickly determined by equipment utilizing the thermal conductivity method and is indicated in terms of liters per square meter per 24 hours of the retained gas.

Manufacturers of fabrics for lighter-than-air Craft, Life Rafts, Life Jackets, Gas Masks, etc., will find this an indispensable instrument. Send for particulars.

CAMBRIDGE INSTRUMENT CO., INC.
3710 Grand Central Terminal, New York, N. Y.

CAMBRIDGE FABRIC PERMEAMETER

BREVITY—Identify by IEN - 2293 if you write the maker

Save TIME and WORRY

CUT COST WITH TRICO AUTOMATIC OILERS

Get *Dependable*, Automatic Lubrication With *Little* Investment.

Get 3 Times the Service with TRICO "Powder-Packed"

RENEWABLE FUSES

They're "different" . . . Custom-built . . . Tamper-proof. Engineered to give maximum efficiency, safety and dependability.

Write for Booklet 206-A

Stop wasteful, "trust-to-luck" hand oiling. Eliminate excessive manpower servicing costs . . . Reduce bearing failures and costly replacements . . . Increase machine life. Remember, unnecessary downtime, means lost production and lost profits. Better try TRICO . . . You'll find it pays off in a BIG way.

WRITE FOR FREE DESCRIPTIVE CATALOG
(No Obligation)

TRICO FUSE MFG. CO. Milwaukee, Wis.

BREVITY—Identify by IEN - 2294 if you write the maker

TRENT FURNACES *Give You All the Advantages of* "F-&-F" *Heating*

With any type of electric heat source, TRENT Furnaces would be outstanding in design, construction, insulation efficiency and appearance. With "FOLDED-and-FORMED" Heating Elements, they become absolutely *tops* in every desirable or required furnace characteristic.

"Folded-and-Formed" Heating Elements provide shorter heating-up time—longer operation at higher voltages—absolutely uniform temperature—amazing freedom from maintenance. They supply the final, and perhaps most important reason why TRENT Furnaces prove so efficient and economical for every service.

TRENT Type H Box Furnace illustrated at right.

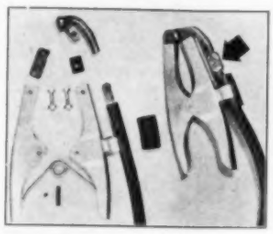
SEND FOR BULLETIN 75-T describing the complete TRENT Furnace line, and containing valuable Furnace Facts. No obligation.

TREN INC
Electrically Heated Industrial Equipment
247 LEVERINGTON AVE. PHILA. 27, PA.

BREVITY—Identify by IEN - 2295 if you write the maker

WELDING . . Grounding clamp with weld connected cable, 500 amp.

Source: ERICO PRODUCTS INC.
2068-72 E. 61st Place, Cleveland 3, Ohio



New clamp is a spring-operated design with permanent weld connection to its ground cable. The weld is a design developed by the company and previously described IEN-12232-50. It and the cable provide 500 amp. of current-carrying capacity.

The clamp body is insulated from the contact jaw. The replaceable contact jaw itself is a copper casting. Gripper clip permanently holds the cable just back of its welded connection. The spring that provides clamping pressure is enclosed by the steel body in protected position.

BREVITY—Identify by IEN - 2296 if you write the maker

CORROSION PROOFING . . Liquid dries to a transparent film on metals

Source: LONDON CHEMICAL CO.
605-9 S. Dearborn St., Chicago 5, Ill.

Neutralizes finger prints

Hydrolift is a new liquid material characterized by its ability to displace water in cracks, corners, as well as on the surface of finished metal products. At the same time it dries in 15 minutes to coat the surface with an invisible film of negligible thickness.

Moisture cannot penetrate this film which presents a clean surface as a base for further finishing operations. Application is by brush, dip or spray after water rinsing the work. Any finished metal can be coated. Coverage is about 8,200 sq. ft. per gallon. The company will supply instructions.

BREVITY—Identify by IEN - 2297 if you write the maker

CLEANING . . Hand hammer for scaling and chipping weld spatter

Source: JACK CHURCHWARD WELDING ACCESSORIES
51 Industrial Ave., North Haven, Conn.

The striking face of this new hammer is multi-pointed to dig into and loosen spatter and scale. The hollow-ground head acts as a scraper. The pick end permits digging into slag in weld pockets and corners. It acts also as a scraping tool to remove slag from the edges of welds. The steel head is heat treated and is mounted on a balanced wood handle.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2298 if you write the maker

NEW 12" VENTILATOR PROVIDES Positive Controlled Ventilation AT ALL TIMES

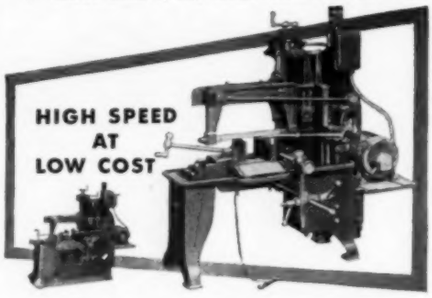
FOR TOILETS
LOCKER ROOMS
AND SMALL BUILDINGS

New 12" Power-Flow Roof Ventilator is a motor-driven fan in weatherproof housing. Provides 975 cubic feet of air per minute at free delivery. Permanently lubricated, enclosed motor. Removable head. Copper insect screen. Automatic shutters available at additional cost.

Write Today FOR COMPLETE DETAILS

Power-Flow ROOF VENTILATORS
De Bothezat Fans Division
AMERICAN MACHINE AND METALS, INC.
East Moline, Illinois

BREVITY—Identify by IEN - 2299 if you write the maker



For tool room, stockroom, or maintenance shop, this 6"x 6" capacity hack saw is ideal when you want speed, accuracy, and economical operation at lowest possible investment.

Embodies similar design principles and features of MARVEL heavier duty production saws. Its shaper-link action that provides quick return stroke, and its heavy pressure screw feed are two exclusive MARVEL features that provide FASTER cutting than can be obtained with any other metal saw in its price class.

Single speed, 2-speed, and 4-speed models are available, to suit all types of applications where materials of different hardness and alloy characteristics are to be cut. Cabinet base or open-leg base are optional.

MARVEL Metal Cutting **SAWS** Better Machines—Better Blades

ARMSTRONG-BLUM MFG. CO.
"The Hack Saw People"
5700 Bloomingdale Ave. Chicago 39, U.S.A.

BREVITY—Identify by IEN - 2300 if you write the maker

with informative pressure-sensitive Kum-Kleen labels

HERE'S A POWER CHARGE produced by the Baker Oil Tool Co. that would be dangerous to handle without safety precautions, instructions, and other vital information directly on the product. Kum-Kleen labels were selected for this vital labeling job because they can be depended upon to stick-and-stay-stuck, will not pop, curl, or peel even in extremes of heat and humidity. Kum-Kleen pressure-sensitive labels are applied without moistening. They stay stuck to hard-to-label surfaces such as cellophane, pliofilm, polyethylene, glass, metals, varnished wood, etc. For positive, durable and economical labeling, get the facts on Kum-Kleen. They can be produced to your size, shape, color and printing specifications for use in many phases of industrial operations. *Write for Samples and Details Today!*

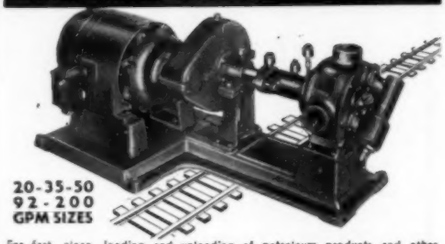
Kum-Kleen

ADDRESS DEPT. IEN-3.
AVERY ADHESIVE LABEL CORP.
MONROVIA, CALIFORNIA

BREVITY—Identify by IEN - 2301 if you write the maker

VIKING

FULFILLS THE NEED FOR A COMPLETE LINE OF TOTALLY ENCLOSED, OUT-DOOR, SINGLE PUMPING UNITS



20-35-50
92-200
GPM SIZES

For fast, clean, loading and unloading of petroleum products and other liquids up to 11,000 S. S. U. Ideal for installing out of doors without protection of any kind.
Reduce your pumping time with these big, rugged units. Built to take it.

OUTSTANDING FEATURES:

1. A complete range of 6 sizes. See capacities listed at left.
2. New, oil-tight, cast iron gear case. No leakage.
3. Radial bearing for pump shaft on 200 gpm size. Bronze bushed bearing for smaller sizes.
4. Stainless steel pump shaft. No rusting.
5. Viking valve on pump head. (Optional)
6. Extra long stuffing box on pump. Leak resistant.
7. Speed and capacity range available for each size pump.
8. Five ball check grease cups. (Other style grease fittings optional.)
9. Complete unit totally enclosed for outside use without protection of any kind when equipped with totally enclosed motor.

VIKING AN HONORED NAME IN PUMPING

For complete information, send for free bulletin SP-223AF today.

Viking PUMP COMPANY
Cedar Falls, Iowa

BREVITY—Identify by IEN - 2302 If you write the maker

32 Pages of Helpful Information on Dust Recovery Systems

If you are now using dust or fly ash recovery equipment in your plant—or are planning installation of such equipment now or later—you will find this new Multiclone booklet full of helpful information. Illustrations and diagrams outline basic principles of dust recovery and how to utilize them for maximum efficiency... how to simplify your installations... how to conserve valuable plant space... how to get high recovery over a wide range of particle sizes, etc. *A copy of this booklet should be in your files for reference and assistance in dust recovery applications. A free copy will gladly be sent you on request. Write today while supplies are adequate.*

WESTERN Precipitation CORPORATION

DESIGNERS, ENGINEERS & MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF CONTAMINANTS ALTHOUGH FROM GASES & LIQUIDS

Main Offices: 1011 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
CHRYSLER BLDG., NEW YORK 17 • 1 LaSALLE ST. BLDG., 1 N. La SALLE ST., CHICAGO 2 • HOBART BUILDING, SAN FRANCISCO 4, CALIFORNIA
PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

BREVITY—Identify by IEN - 2303 If you write the maker

The World's Most Efficient
CONCRETE DRILL

THE TILDEN ROTARY KONKRETE KORE DRILL

gives lowest cost per foot of concrete drilled because it:

- Drills at 2 to 6 inches per minute
- Drills reinforcing bars and beams in concrete
- Drills up to 30 feet of concrete without resharpening
- Gives straight, clean holes for anchors, conduit, etc.
- Uses ordinary electric drill

Quiet cutting action gives minimum disturbance of surrounding activities.

New, exclusive "centerless" design of drills from ¼" through 7/16" diameters is 3 to 4 times more efficient than ordinary pointed drills. Concrete is penetrated faster with 80% less pressure. Prices on these drills have been reduced by as much as 50%.

U. S. Pat. No. 2508474

Tilden drill bits are available in standard sizes of from ¼" to 4" diameters. Quotations on larger sizes on request.

Write for catalog with complete details on these revolutionary concrete drill bits.

TILDEN TOOL MANUFACTURING COMPANY
1995 NO. FAIR OAKS, PASADENA 3, CALIFORNIA

BREVITY—Identify by IEN - 2304 If you write the maker

STOP BASEMENT WALL LEAKS

Smooth-On No. 7 Iron Cement stops your basement wall and floor leaks. You can apply Smooth-on No. 7 with a trowel or stiff brush, to cracks, holes, porous spots or seams in concrete, brick, stone walls or floors. This effective Smooth-On Cement will stay in place, because it expands slightly as it sets. You can also use Smooth-On No. 7 to stop leaks in tanks, cisterns, pools, troughs, fountains, etc. Use it too, to seal openings where piping passes through walls. Sold in 1, 5, 20, and 100 lb. sizes.

FREE Repair Handbook—40 pages packed with helpful suggestions for repairs to equipment and piping, in the shop, around the home and car. Also ask for leaflet describing the uses of Smooth-On No. 7. Write today.

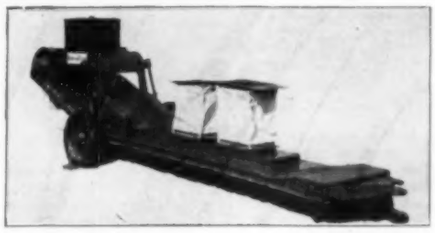
SMOOTH-ON MANUFACTURING COMPANY, Dept. 1
570 Communipaw Ave. Jersey City 4, N. J.

Do it with SMOOTH-ON NO. 7 IRON CEMENT

BREVITY—Identify by IEN - 2305 If you write the maker

CONVEYING . . Car unloader and belt conveyor for bulk cement

Source: BARBER-GREENE CO.
629-33 W. Park Ave., Aurora, Ill.



New design of the company's Model-358 under-car aggregate unloader and of its Model-362 and 363 portable belt conveyors is now available to apply this motor-driven belt equipment to unloading bulk cement from hopper cars and conveying it to a point of use or storage.

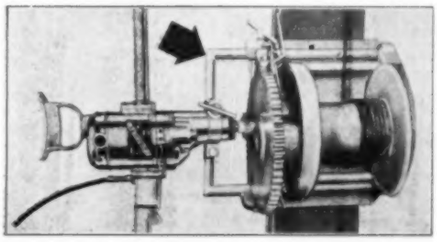
The unloader applies in a shallow pit beneath a railroad track. Collapsible canvas spouts mounted with metal stiffeners can be drawn up between the cross-ties and attached to the hoppers of the cement car. The discharge end of the unloader is equipped with a metal-enclosed concentrating spout to direct the cement into the intake end of a hopper on the conveyor. The conveyor housing encloses the belt except for a small opening at the foot end. A concentrating spout, similar to that on the unloader, is fitted at the head end of the conveyor for dust-free delivery.

The unloader measures about 21 ft. in overall length by 33 in. in width over its main housing and 62 in. over its wheel housing. The conveyors are 18 and 24-in. units, wheel-mounted for incline operation. The smaller one is in three lengths between 20 and 30 feet. The larger is 25, 30 and 35 feet.

BREVITY—Identify by IEN - 2306 If you write the maker

WINCH . . Bracket assembly of company's drill on American winch

Source: SKILSAW INC.
5039 Elston Ave., Chicago 30, Ill.



Indicated in the illustration is a U-shaped bracket that has been designed by the company to apply one of its portable electric drills to drive a normally hand-operated American winch. The bracket and a 1-in. drill, Model 163, convert the winch into a power-operated assembly with capacity at 1,000 lb. at 10 rpm. The company is prepared to supply all of the elements making up the assembly or just the drill and bracket for installation on winches now in service.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 30

BREVITY—Identify by IEN - 2307 If you write the maker

PAGE FENCE Since 1883

• AMERICA'S FIRST WIRE FENCE •

Sabotage is a danger which calls for vigilance day and night. Property line vigilance is the job for Page Chain Link Fence, now as it has been for more than 60 years. Consult the nearby, long-experienced Page Fence engineering and erecting firm, which will submit cost estimates without obligation. Name and address will be sent with illustrated fence data on request.

Write to PAGE FENCE ASSOCIATION in Monessen, Pa., Atlanta, Bridgeport, Chicago, Denver, Detroit, Los Angeles, Philadelphia, New York or San Francisco.

PRODUCT OF PAGE STEEL & WIRE DIVISION OF AMERICAN CHAIN & CABLE COMPANY, INC.

BREVITY—Identify by IEN - 2308 If you write the maker

SPEED UP SMALL PARTS ASSEMBLY

Parts feed automatically toward front—end reaching and fumbling.

Bins taper toward front to form convenient semicircle—keep all bins within easy reach.

Stacking, locking construction for rigid set-ups, easily changed when necessary.

All-welded construction. Smooth, folded edges.

New-design, adjustable hoppers provide increased capacity and permit regulated flow of parts according to sizes and weights.

Two-sizes—tapered or straight sides.

IMMEDIATE DELIVERY

Manufactured and sold in Canada exclusively by Wickware-Stackbin, Ltd., Ottawa

Write Stackbin Corp., 1077 Main Street, Pawtucket, R. I.

STACKBIN SYSTEM "Stacked and Still Accessible"

BREVITY—Identify by IEN - 2309 If you write the maker

YOUR "Just-Right" PUMP

DN, famous Worthington MONOBLOC—with built-in motor.

CN, frame-mounted—readily driven by any type of power.

is among these 10,000 combinations

No more compromising with a pump that isn't *just right* for the job.

From Worthington's vast selection of standard centrifugal pumps—you're sure to find the one that meets your specifications exactly.

No other line of pumps is so complete—capacities from 10 to 1800 gpm, heads to 535 ft, 40 sizes of casings, 200 combinations of frame-mounted designs—10,000 combinations in all!

See Your Worthington Distributor

WORTHINGTON

Worthington Pump and Machinery Corporation, Pump and Compressor Merchandising Division, Harrison, New Jersey

The Good Right Hand of Industry

BREVITY—Identify by IEN - 2310 If you write the maker

NOW... WARPLIS precision ground Flat Stock Immediately Available from FRASSE

Warplis precision ground flat stock, ready for use on all precision jobs, is now quickly and conveniently available from Frasse warehouse stock. This cold melt electric furnace tool steel is oil hardening, non-warping—precision ground on all four surfaces and free from defects and decarb.

Frasse carries over 150 different sizes in stock for you to choose from. Flat sizes range from 3/64" to 1¼" in thickness, square sizes from ¼" to 1" . . . standard length is 18", other sizes and lengths can be furnished to order.

Each length of Warplis bears its size and grade and is furnished in its own individual protective wrapper bearing size and heat treatment. You'll find Warplis a pleasure to work with . . . and you'll realize a considerable saving on make-ready. Write for additional details and our Warplis inventory—no obligation.

FRASSE for WARPLIS PRECISION GROUND FLAT STOCK

Peter A. FRASSE & Co., Inc.
17 Grand Street, New York 13, N. Y.
JERSEY CITY PHILADELPHIA BUFFALO SYRACUSE

BREVITY—Identify by IEN - 2311 If you write the maker

Johnson electric motor Bearings FROM STOCK

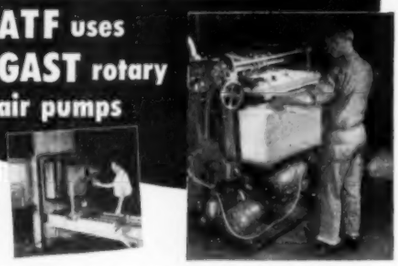
● Over 300 types . . . each one correct in design, alloy, and tolerance . . . ready for immediate installation . . . are available at your local Johnson Bronze warehouse. Every Johnson Bronze Bearing is made from highest quality materials and is precision finished. Properly installed and cared for, Johnson EM Bearings will outlast the motor.

Write for New Catalog

Johnson Bronze
SLEEVE BEARING HEADQUARTERS
476 SOUTH MILL STREET • NEW CASTLE, PA.

BREVITY—Identify by IEN - 2312 If you write the maker

on presses—printing frames—vacuum-back cameras—ATF uses GAST rotary air pumps



Like American Type Founders, you may gain real advantages by specifying Gast Rotaries as components of your products.

Consider this record: For 10 years, ATF has used Gast Air Pumps on their Vacuum-back Cameras and Printing Frames.

The result? Gast dependability and performance proved itself. Now ATF is using Gast Air Pumps on many Kelly-One and Little Giant Presses. In the graphic arts industry — and in many other fields — the trend to Gast continues.

When you have original equipment problems that might be solved with air, write Gast. "Air may be your answer!"

SEE OUR CATALOG IN SWEET'S FILE

Gast Application Ideas booklet — showing 26 design problems solved — sent upon request.

Original Equipment Manufacturers for Over 25 years

GAST ROTARY AIR MOTORS · COMPRESSORS · VACUUM PUMPS
(TO THREE H.P.) (TO 50 LBS.) (TO 28 INCHES)
GAST MANUFACTURING CORP., 119 Kirkley St., Benton Harbor, Mich.

BREVITY—Identify by IEN - 2313 If you write the maker

Temperature regulation to plus or minus one degree F. is the unheard-of accuracy obtainable with the self-operated Farris Stacon Temperature Regulator.*

Two design factors are responsible:

1. Liquid in bulb flashes to vapor in power bellows steam does 99 per cent of the work . . . without appreciable time lag.
2. Full balancing bellows has the effect of double seated operation with single seated valve . . . eliminates spring counterpoise and all packing glands. provides free-floating valve disc . . . prevents response to variations in steam temperature.

Stacon Regulators are compact, trouble-free, dirt-proof. They operate consistently in the worst possible surroundings and require no maintenance.

You'll want to learn more about the most sensitive, accurate, economical temperature regulator on the market. Write for Stacon Bulletin 50-1000.

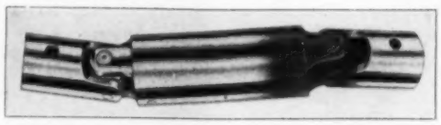
* PATENTED

Farris Stacon Corp.
432 COMMERCIAL AVE • PALISADES PARK, N. J.

BREVITY—Identify by IEN - 2314 If you write the maker

DRIVE . . Universal joint for shafts from 3/16 to 3 in. diameter

Source: CURTIS UNIVERSAL JOINT CO.
2-6 Birnie Ave., Springfield 7, Mass.



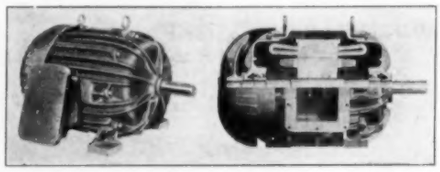
Lo-Friction designates new design in the center block of the company's standard line of block-and-pin universal joints. This design employs two grooves on each of the four bearing surfaces of the center block to promote uniform lubrication and to divide the block into 16 bearing faces. The illustration shows test application of the new design, to the left in the double assembly, as compared to the plain standard design shown to the right in the same assembly. After running the unit in a dynamometer test, with load and angle increased beyond safe limits, the standard design discolored due to heat while the new low-friction unit was not affected.

Fourteen standard sizes measure 3/8 to 4 in. in outside hub diameter and take shafts measuring 3/16 to 2 in. in diameter. A 6-in. unit, available to specification, measures 6 in. in outside diameter and takes shafts to 3 inches. Static torque rating is 140 in. lb. on the smallest unit, 131,000 in. lbs. on the 4-in. assembly. Operating angle is recommended at not more than 30 deg. unless special design is called for. In this case the angle can be increased to a maximum of 45 degrees.

BREVITY—Identify by IEN - 2315 If you write the maker

MOTOR . . Explosion proof, squirrel cage design, frame 364 to 505

Source: CROCKER-WHEELER DIVISION
49 Kesley St., Jeannette, Pa.



Form CFC is a new totally-enclosed fan-cooled motor for service in atmospheres containing explosive and inflammable vapors including Class 1 Group D and Class II Groups F and G. It is particularly suited for refineries, chemical plants, grain elevators. The assembly includes a shaft-mounted fan at one end under an end-frame hood that draws air in from the rear and delivers it over the finned main housing that encloses the motor itself.

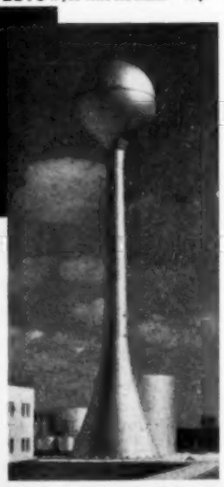
The rotor is mounted on pre-lubricated sealed ball bearings that require no servicing attention for a number of years. The shaft issues through long fitted clearances in the end frames. Threaded drain plugs permit clearance of any internal condensate. Motor leads are sealed in the frame to permit positioning the conduit box as required.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
All products are listed in the index, page 110

BREVITY—Identify by IEN - 2316 If you write the maker

MODERN FIRE PROTECTION



The Horton Watersphere is today's answer to an independent, efficient means of plant fire protection. Combined with an automatic sprinkler system, this gravity water supply insures instant action and round-the-clock performance. You get water when and where you need it.

Waterspheres are built in standard capacities ranging from 25,000 to 250,000 gallons. Write our nearest office for estimating prices.

CHICAGO BRIDGE & IRON COMPANY
2123 McCormick Building • Chicago 4, Illinois
Atlanta • Birmingham • Boston • Cleveland • Detroit • Houston
Los Angeles • New York • Philadelphia • Salt Lake City
San Francisco • Seattle • Tulsa
Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

BREVITY—Identify by IEN - 2317 If you write the maker

New Exact Weight Models for Unknown or Catch Weights . . .

EXACT WEIGHT Scales announce a complete line of new automatic fan dial scales for unknown or catch weighing — five types and twenty-three models, in capacities from 1 lb. to 40 lbs. Equipment is available in both metric or avoirdupois as desired. These scales are manufactured to the same high standards of all EXACT WEIGHT Scales to give you greater accuracy, dependability, and long lasting service in hard industrial use. The new line is highly flexible and adaptable to many varied applications. New literature giving full specifications of all models as to weighing capacity, dial markings, type of commodity holders and beams is ready for mailing. Write for your copy, either for immediate use, or for your files.

EXACT WEIGHT SCALES
Industrial Precision
THE EXACT WEIGHT SCALE COMPANY
932 W. Fifth Avenue, Columbus 8, Ohio
2920 Bloor St., W., Toronto 18, Canada

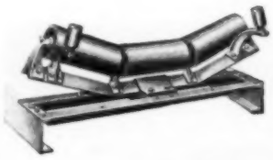
BREVITY—Identify by IEN - 2318 If you write the maker

BELT IDLERS

Thousands of Jeffrey Idlers are being used daily in Belt Conveyor service all over the world. We can furnish them by the rod, or mile, just as the job requires. We know how to provide for reliability under tough conditions, handling of peak loads, low investment, high salvage, etc. Let us talk things over—constructively.

Roller or Ball Bearing Troughing and Return Idlers for belts from 14" to 60" wide.

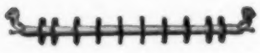
Roller or Ball Bearing Carrying and Return Idlers for Flat Belts from 14" to 60".



Roller or Ball Bearing Self-Aligning Troughing Idlers.

Roller or Ball Bearing Self-Aligning flat belt return idlers.

Impact Absorption Idlers for protecting belts at loading points. (Pat'd)



Spool type return idlers for use where sticky or dirty materials are handled. (Pat'd)

Self-aligning spool type return idlers.

Catalog No. 785 Tells All

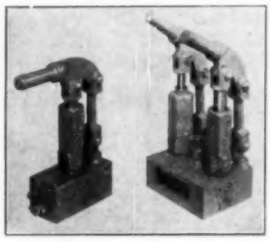
JEFFREY
ESTABLISHED 1877
THE JEFFREY MANUFACTURING CO.
914 N. Fourth Street Columbus 16, Ohio

BREVITY—Identify by IEN - 2320 If you write the maker

BREVITY—Identify by IEN - 2321 If you write the maker

HAND HYDRAULIC PUMP

Single and Double Designs To 20,000 Pounds



Interchangeable Pistons 1-1-1 inch

✱

Integral Release Valve

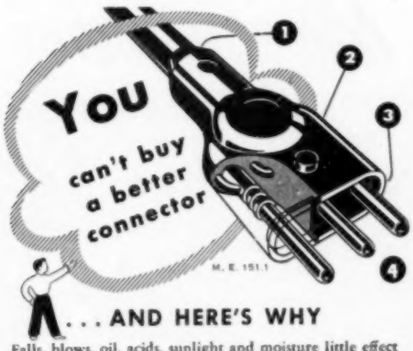
✱

Unit Reservoir 360 cu. in.

Pressure range is 3,000 to 20,000 pounds. Pipe connections measure ¼ inch. Handle length is 18 inches. Weight is 8 to 18 pounds. Release valve can be bolted or welded into position.

WILLIAM S. PINE
1637 E. 22nd St., Los Angeles 11, Calif.

BREVITY—Identify by IEN - 2322 If you write the maker



. . . AND HERE'S WHY

Falls, blows, oil, acids, sunlight and moisture little effect the life or performance of JOY electric plugs or receptacles. Molded as one-piece Neoprene units they can't crack or shatter and won't become "out-of-round". Before you buy, it will pay you to learn why these and other worthwhile features have made them an outstanding choice of American industry.

1. Sturdy one-piece cable-connector assembly.
2. Safe, long lasting resilient Neoprene jacket.
3. Water-Seal prevents moisture infiltration.
4. Contacts firmly embedded in connector body.

Consult a JOY Engineer or write for your free copy of Bulletin MC106 on the JOY electric connector family today.

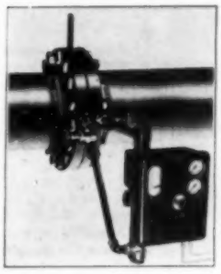
100 YEARS OF ENGINEERING LEADERSHIP—1851-1951

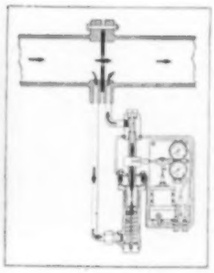
JOY MANUFACTURING COMPANY
HENRY W. OLIVER BUILDING, PITTSBURGH 22, PENNSYLVANIA
IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LIMITED, SARNIA, ONTARIO

BREVITY—Identify by IEN - 2323 If you write the maker

METER . . Variable area instrument reads flow around orifice in main line

Source: FISCHER & PORTER CO.
42 County Line Road, Hatboro, Pa.





Main line flow of gases, steam, vapors, liquids of not abnormal viscosity or solids content is indicated by this new V/A, variable-area, Cell. The flow also is converted to proportional air pressure to operate remote recording and control equipment by addition of the company's pneumatic transmitter on the Magnabond magnetic coupling which operates the cell's indicating pointer.

Installation is at the main line, as shown in the illustration, with intake on the upstream side of a selected orifice positioned in the line and return to the downstream side. Upward flow through the cell of the portion of the flow thus by-passed positions the rotameter float which carries a stem extension operating in a central tube. Permanent Alnico magnets on the pointer and transmitter-actuating mechanism outside the tube cause them to follow changes in the stem position upon change in flow.

The float, the float chamber and an interchangeable range fitting that assembles on the inlet to the instrument are made of Type-316 stainless steel. The pneumatic transmitter is enclosed in a weatherproof case.

BREVITY—Identify by IEN - 2324 If you write the maker

FIRST AID . . Oxygen inhalator feeds from tank through face mask

Source: MINE SAFETY APPLIANCES CO.
21 Braddock Ave., Pittsburgh 8, Pa.

No. CW-49826 is a new demand-type oxygen inhalator, which employs the user's breathing to deliver oxygen or applies with artificial respiration when breathing has stopped. The equipment includes a 40-cu. ft. cylinder with the necessary gages, regulator, flexible tube and half-mask facepiece that covers the mouth and nose. A fresh-air inlet valve operates when the supply of oxygen is exhausted or cut off. The equipment is packaged in a carrying case as shown in the illustration.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2325 If you write the maker

200-5th Ave., New York
Merchandise Mart, Chicago

BREVITY—Identify by IEN - 2326 If you write the maker

HANNIFIN

75 STANDARD MODELS

Hydraulic Presses

Engineered To Meet Your Requirements

IT'S EASY to get hydraulic presses engineered to meet your particular requirements when you choose from the Hannifin line. 75 standard models, plus many special designs, in capacities ranging from 5 to as high as 500 tons are available for handling standard and special production jobs: straightening—press fit assembly—forming—molding—broaching and similar operations. Hannifin design readily permits modifications or variations from standard at moderate cost. Table size, gap, reach, control equipment, and ram speed can be altered easily to suit special conditions. Take advantage of Hannifin engineering service — ask for recommendations.

Right — Model F-250 forcing press. Capacity 25 tons.

SEND FOR THIS CATALOG

BULLETIN 130, "Hannifin Standardized Hydraulic Presses," contains detailed information on Series F Forcing Presses, Series S Straightening Presses, and Series C Column Type Presses — Helpful specification and engineering data. ASK FOR YOUR COPY.

HANNIFIN CORPORATION 1107 S. Kilbourn Ave., Chicago 24

BREVITY—Identify by IEN - 2327 If you write the maker

NEW CLEANER Does the Work of 3

IDEAL BLO-R-VAC

A "Tank-Type" Cleaner
A "Hand-Type" Cleaner
A Blower-Sprayer
. . . All In One Unit!

More for your cleaner dollar with this ALL-NEW, low-cost, multi-purpose unit! As a "tank-type" cleaner it vacuums lint, dirt, dust, scrap metal and *picks up water.* Has strong dust-tight bag and 12-gallon steel tank. Power unit can be removed in a jiffy for use as a blower, a sprayer . . . or a hand-type vacuum cleaner! Full selection of attachments available. Built to highest *industrial* standards. Two models—1-1/3 H.P. and 2/3 H.P.

TRY IT FREE

IDEAL INDUSTRIES, Inc.
1108 Park Avenue
Sycamore, Illinois

Arrange FREE DEMONSTRATION of your new BLO-R-VAC in our plant.

NAME_____
COMPANY_____
ADDRESS_____
CITY_____ ZONE____ STATE____

SOLD THROUGH AMERICA'S LEADING DISTRIBUTORS

BREVITY—Identify by IEN - 2328 If you write the maker

Receptacles for FS-FD Pylet bodies

Watertight Plugs

Watertight Plugs and Receptacles WITH TRIPLOC CONTACT UNITS

These substantially built plugs and receptacles are equipped with Triploc contact units and are watertight for use as floodlight connections or for any other type of portable electrical equipment where weather protection is needed. Types include 1, 2, 3, 4, 6, and 8 pole units. Receptacles are galvanized cast iron with brass cap. Plugs are cast aluminum alloy with threaded nut and rubber bushing cord grip. Female contact units can be mounted in plug shell as well as in receptacle housing, as all contact units are interchangeable and reversible. For any type of outdoor plug and receptacle connections refer to your Pylet Catalog for complete listings.

THE PYLE-NATIONAL COMPANY
1348 North Kostner Avenue • Chicago 51, Illinois

BREVITY—Identify by IEN - 2329 If you write the maker

SARCO

Steam heating systems are only as good as the steam traps which keep the radiator free from air and condensate. The famous Sarco bellows actuating it has made Type H a leader in this field. Angle, straightway or corner offset patterns. Catalog No. 150.

TYPE **H** RADIATOR TRAP

289

SARCO SAVES STEAM

SARCO COMPANY, INC.
Represented in Principal Cities
Empire State Building, New York 1, N. Y.
SARCO CANADA, LTD., TORONTO 5, ONTARIO

IMPROVES PRODUCT QUALITY AND OUTPUT

BREVITY—Identify by IEN - 2330 If you write the maker

Cuts Floor-Cleaning Time 2/3!

Here is a *Finnell Scrubber-Vac, No. 418P*, specially designed for buildings with 2,000 to 15,000 sq. ft. of floor space. Cleans floors in *about one-third the time* required with a conventional 15 or 18-inch polisher-scrubber using separate equipment for pickup. Speeds cleaning by handling *four operations in one*—applies the cleanser, scrubs, rinses if required, and picks up (damp-dries the floor). Also can be used for the dry work (polishing, et cetera). Has 18-inch brush ring . . . is self-propelled. Can be leased or purchased. For free demonstration on your own floors, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 2603 East St., Elkhart, Ind.

FINNELL SYSTEM, INC.
Pioneers and Specialists in
FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES
BRANCHES IN ALL PRINCIPAL CITIES

BREVITY—Identify by IEN - 2331 If you write the maker

PRODUCT-PROVED WIRE

CONTINENTAL STEEL CORP. STEEL CONTINENTAL WIRE KOKOMO, IND.

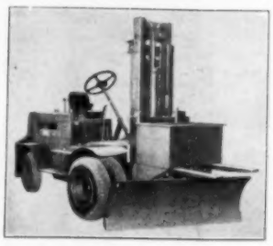
● The worth of Continental wire has been *proved* in the products of hundreds of leading manufacturers. Continental wire is uniform in temper, uniform in coating. Whether your need is for a rust-resistant wire that can stand up under difficult forming operations . . . or for a shaped wire to provide smarter-looking, longer-lasting trim . . . Continental wire can help you build a better, more profitable product. Write Continental at Kokomo.

CONTINENTAL STEEL CORPORATION

BREVITY—Identify by IEN - 2332 If you write the maker

TRUCK . . Plow attachment for company's ½ ton or larger trucks

Source: CLARK EQUIPMENT CO.
Battle Creek 49, Mich.



Spring backed blade in this new plow attachment is combined with a ballast box and pair of channels, the latter to receive the standard forks of a lift truck. T-bolts are turned by hand to secure the attachment in place. Weight of the assembly without ballast is 400 pounds.

The plow is designed with a curvature vertically. It can be set at an angle with the front of the truck in any one of six positions. A shoe at the base is made of hardened steel. The truck pushes against a vertical support plate at two pushing blocks, which rest against the base of the upright assembly.

BREVITY—Identify by IEN - 2333 If you write the maker

WELDING . . AC. arc machine rates 40 to 375 amp., uses silicone

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

For light or heavy duty

Silicone insulation and automatic Hot-Start control feature the construction of this new ac. arc machine. It is assembled in a vertical cylindrical housing that measures 17 by 35 inches. It can be mounted on wheels for portable application. It takes 3/32 to ¼-in. electrodes, can be connected at the secondary terminals for high or low-range operation.

A starting surge of current is caused to flow upon striking an arc by the action of a gas-filled, sealed, time-delay magnetic switch and a wound resistor. The surge is high for hard-to-start settings, lower for easy-to-start adjustment. Thus the correct boost is provided for any setting. Windings are rated for a temperature rise to 130 deg. C. The coils are ventilated for continuous duty. The machine weighs 325 pounds. Designation is Type 6KW30J.

BREVITY—Identify by IEN - 2334 If you write the maker

HOSE CLAMP . . Stainless steel, band design, sizes ½ to 2 inches

Source: SPECIALTY PRODUCTS CO.
1963-67 E. 66th St., Cleveland 3, Ohio

The clamp band in this new hose fitting is made of 26-gage stainless steel with 18-gage ears spot welded in position. The ears carry a bolt and nut as shown in the illustration. The band ends overlap so there is no chance of pinching a hose.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2335 If you write the maker

WHAT EVERY ENGINEER SHOULD KNOW ABOUT STEAM TRAP ECONOMY

THIS **FREE** BOOK GIVES COMPLETE INFORMATION

● Every engineer should know there is a lot of difference in steam traps from the standpoint of true economy. A trap may be priced right and have a large capacity . . . but still be costly to install and remove for service, making it expensive in the long run. We urge every steam trap buyer to learn the truth about steam trap economy. Send for a copy of Solving Steam Trap Problems. It explains the economics of steam trapping in complete detail. Write for a free copy now.

THE V. D. ANDERSON CO.
1931 W. 96th St. • Cleveland 2, Ohio

SUPER-SILVERTOP STEAM TRAPS

BREVITY—Identify by IEN - 2336 If you write the maker

CERRO ALLOYS *speed* DEFENSE PRODUCTION!

Do you need a fast method to:

Anchor bearings; bushings; punches in dies for blanking, piercing and trimming; stationary parts in machinery, etc. . . .
Make split jaw chucks . . .
Support delicate parts during machining . . .
Bend thin-walled tubing, wave guides, moldings, extruded shapes . . .
Form sheet metal parts (short run) . . .
Make duplicate patterns for match plates . . .
Make molds for wax patterns, etc. . . .
Make assembly, checking and die spotting fixtures?

Just write or phone for our useful folder:
"How to Select and Use Low-Melting Alloys as Production Aids."

It will tell you how to do the above operations. DO rating required for prompt delivery of alloys.

CERRO de PASCO
COPPER CORPORATION

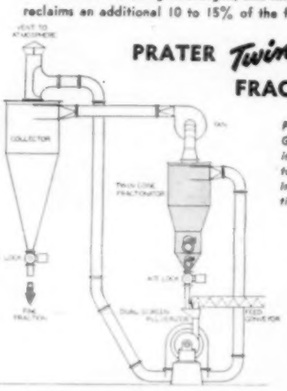
40 Wall Street Dept. 6 New York 5, N. Y.

BREVITY—Identify by IEN - 2337 If you write the maker

2 PNEUMATIC CLASSIFIERS IN 1 COMPACT UNIT

• LESS MATERIAL HANDLING COST
• GREATER YIELD OF FINES

Here's a more effective means of separating finely ground materials according to particle size. Coarse material is reclassified before being discharged, and this *Refractionation* reclaims an additional 10 to 15% of the fines.



PRATER *Twin Cone* FRACTIONATOR

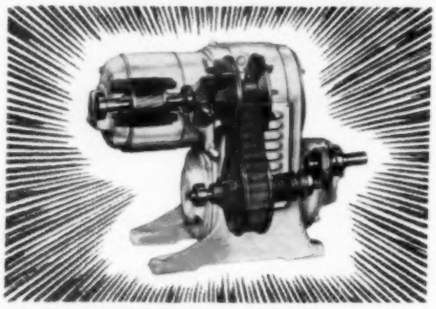
Prater Closed Circuit Grinding and Fractionating System . . . designed to pulverize and classify in one continuous operation.

SEND FOR NEW BULLETIN

PRATER PULVERIZER CO.
1536 S. 55th Court Chicago 50, Ill.

BREVITY—Identify by IEN - 2338 If you write the maker

Miracle MOTOR STEPS UP PRODUCTION!



VARIDRIVE 2 TO 10,000 RPM

Varidrive will give your powered equipment any and every speed needed right up or down to a split rpm. No external gearing. Simply turn the control handle for instant speed selection. Increase production 10%, 20%, 30% or more. ¼ to 30 h.p. Ask for new U.S. Varidrive Bulletin.

U.S. ELECTRICAL MOTORS, Inc.
Los Angeles 54, Cal. or Milford, Conn.

US MOTORS

BREVITY—Identify by IEN - 2339 If you write the maker

Faster, Better, More Accurate...

The Ozalid STREAMLINER duplicates anything drawn, typed or written—in seconds!* Gives you permanent, accurate copies in any size—several colors—on a variety of papers, cloths and films. Printing speed: up to 10 ft. per minute. Changes quickly, easily made with Ozalid *intermediate!*

FREE: For complete information, write for booklet. OZALID, Dept. H-7, Johnson City, N.Y. Or call your local distributor.

*If light won't shine through your original, an inexpensive intermediary step is taken.

Cut Copying Costs... Use **OZALID**

Johnson City, New York. Ozalid in Canada—Hughes Owens Co., Ltd., Montreal

A Division of General Aniline & Film Corporation. *"From Research to Reality."*

BREVITY—Identify by IEN - 2340 If you write the maker

Preferred power for portable grinders and a wide range of other equipment for railroad maintenance — the world's most widely used single-cylinder gasoline engines on machines and tools for industry, construction, railroads, oil fields, and on appliances and equipment for farm and home.

ONLY Briggs & Stratton can give you the benefits of more than 30 years of air-cooled power experience — gained in the production of more than 5,000,000 single-cylinder, 4-cycle, air-cooled gasoline engines. Briggs & Stratton Corporation, Milwaukee 1, Wis., U.S.A.

In the automotive field Briggs & Stratton is the recognized leader and world's largest producer of locks, keys and related equipment.

BREVITY—Identify by IEN - 2342 If you write the maker

CUTTING . . Engine driven machine operates diamond blade to cut concrete

Source: FELKER MFG. CO.
1130 Border St., Torrance, Calif.

Wisconsin engine rating 13.5 hp. has replaced the 10-hp. engine employed on the company's Model-250 concrete-cutting machine previously described IEN-7061-50. A new hose connection has been added for positive water delivery to the diamond-rim blade from an external source in addition to feed supplied by gravity from the 15-gal. tank on the machine itself.

Cutting capacity is 6½ in. in depth with an 18-in. blade. The machine takes blades ranging from 8 to 18 in. in diameter on either end of its spindle. Guards are supplied for units measuring 14 and 18 inches. Cutting feed is controlled by a hydraulic retarder to prevent sudden shock or overloading.

BREVITY—Identify by IEN - 2343 If you write the maker

CLEANING . . Hand cream for use before and after working

Source: COMPO CHEMICAL CO.
154 Causeway St., Boston 14, Mass.

Sample available upon request

Ty-D Hand Protector trade names new cream material designed to rub over a worker's hands and arms prior to operations that involve contact with various water-insoluble coatings. The initial application prevents such coatings from adhering to the skin. A second application at the end of a work period, followed by water rinsing, results in easy removal. A little more, finally rubbed in, leaves the hands and arms in good condition.

The material is packaged in tubes listing at 35 cents each, in 12 or 24 tube quantities to a shipping case. It is available also in a 1-lb. jar listing at 75 cents.

BREVITY—Identify by IEN - 2344 If you write the maker

TESTING . . Electronic instrument provides ultra low frequency signals

Source: KROHN-HITE INSTRUMENT CO.
578-82 Massachusetts Ave., Cambridge 39, Mass.

Model 410-A is a new ultra-low frequency oscillator combining sub-audio with normal audio frequencies to provide sine and square-wave outputs over a range from .02 to 20,000 cycles per second. Six frequency bands are provided, each covering a decade with continuous frequency control. An 11-in. illuminated direct-reading logarithmic scale is employed on all bands.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 88

BREVITY—Identify by IEN - 2345 If you write the maker

Kester Soldering FLUX

62 DIFFERENT FLUXES to meet Your Requirements

Kester makes a flux for every soldering operation because modern efficiency demands the correct flux for the job. Consult Kester's Technical Department on any flux problem.

Liquid Fluxes—Soldering Salts and Paste

Free—Technical Manual, "Solder and Soldering Technique"

KESTER SOLDER

KESTER SOLDER COMPANY
4201 Wrightwood Avenue, Chicago 39, Ill.
Factories also at
Newark, New Jersey • Brantford, Canada

BREVITY—Identify by IEN - 2346 If you write the maker

MERCURY "Yak" equipped with boom attachment and hooks, handles and stacks awkward shaped loads. An example of the adaptability of MERCURY equipment to unusual conditions. Write for details.

THE MERCURY MANUFACTURING CO.
4132 So. Halstead St., Chicago 9, Ill.

MERCURY TRACTORS • TRAILERS • LIFT TRUCKS

BREVITY—Identify by IEN - 2347 If you write the maker

BREVITY—Identify by IEN - 2348 If you write the maker

Ice-M-O-V-E-S So Does Traffic

when a WISCONSIN-Powered COMPRESSOR Goes to Work!

Clearing ice-covered streets and sidewalks quickly and economically is a big winter-time job . . . handled efficiently with pneumatic hammers operated by Wisconsin-Powered Schramm compressors, made by Schramm, Inc., West Chester, Pa.

Equipment builders and users alike are more and more recognizing the fact that it pays to *standardize* on Wisconsin Heavy-Duty Air-Cooled Engines. These rugged engines provide dependable, all-weather service . . . in tropic heat or polar cold . . . with complete freedom from cooling chores and troubles. A rotary type, high-tension outside magneto, equipped with impulse coupling, provides quick starting and sure-firing ignition.

4-cycle single cylinder, 2-cylinder and V-type 4-cylinder models, 3 to 30 hp. Write for detailed data.

WISCONSIN MOTOR CORPORATION
World's Largest Builders of Heavy-Duty Air Cooled Engines
MILWAUKEE 46, WISCONSIN

BREVITY—Identify by IEN - 2349 if you write the maker

QUALITY TOKHEIM HAND PUMPS

for plant-wide improvement of liquid handling

Looking for an economical solution to your liquid handling problems? Then, investigate these pumps. Tokheims dispense a variety of liquids. They eliminate dripping, deliver fluid free of sediment, conserve on storage space. Easy to operate. No wasted motion. Self-priming. Low-cost. Call your oil company or Tokheim representative for a demonstration. Write factory for literature and a list of liquids this pump will handle.

Here are a few spots where TOKHEIMS SERVE BETTER!

General Products Division
TOKHEIM OIL TANK AND PUMP COMPANY
1654 Wabash Avenue, Fort Wayne 1, Indiana
Factory Branch: 1309 Howard Street, San Francisco 3, California

BREVITY—Identify by IEN - 2350 if you write the maker

WITH A *Standard* UTILITY BELT-VEYOR

LIFT OR LOWER—FLOOR TO FLOOR OR CONVEY HORIZONTALLY

Move boxes — cartons — crates — sacks and bundles from basement to first floor, or any floor to floor, or convey in a straight line — continuously with the Standard UTILITY BELT-VEYOR. A compact, pre-engineered unit, easy to install (over existing stairways where practical) handles commodities up to 150 lbs. — available in 4 belt widths — 10, 14, 20 and 24 inch — and equipped with adjustable guard rails to facilitate handling packages wider than belt. Electric motor operated. Write for Bulletin IEN-31.

Standard Conveyor Company
North St. Paul
Minnesota

Sales and Service in Principal Cities

Standard GRAVITY & POWER CONVEYORS

BREVITY—Identify by IEN - 2351 if you write the maker

VULCAN

WATER IMMERSION HEATER

Automatic *Thermostat Control* Heats Water *Electrically*

in large and small tanks, range boilers, etc.

Provides low cost hot water for small factories and stores, offices, laboratories, apartments, barber shops, garages, trailers, summer camps, beauty shops, churches, clubs, dentists, farms, florists, lodges, markets, museums, photographic studios, etc.

EASILY INSTALLED — DOES NOT DISTURB EXISTING PIPING

Special types for heating oils, chemicals and other liquids.

VULCAN ELECTRIC COMPANY
DANVERS 8, MASS.

Makers of Vulcan Electric Soldering Tools, Electric Solder Pots, Electric Branding Irons and Electric Heating Units.

NOTES

Reviews and announcements to keep you informed on sources of special assistance for your daily problems. Subjects include unusually helpful manufacturers' literature, textbooks of industrial interest, slide films and motion pictures on training or product description, unusual applications of existing equipment, formation of new service organizations, new processes, expositions, conventions. Copies of printed material and films are available. Any limiting conditions are named.

BREVITY—Identify by IEN - 2352 if you write the maker

ALUMINUM . . How to use aluminum tubes for pneumatic instrument lines described in booklet

Aluminum Co. of America
670 Dept. 1, Gulf Bldg., Pittsburgh 19, Pa.

Suggestions on the use of aluminum tube for instrumentation are presented in new 8-page bulletin, "Instrument Lines of Alcoa Aluminum". They are given as answers to questions of why aluminum, where, what alloy, how installed.

BREVITY—Identify by IEN - 2353 if you write the maker

BATTERIES . . Technical article reprint on characteristics of the nickel-cadmium storage battery

Nickel Cadmium Battery Corp.
100 Park Ave., 31st Floor, New York 17, N. Y.

"Storage Batteries" titles an article from the technical literature written by James E. Cassidy. It is made available by the company as an 8-page reprint bulletin. Topics include storage battery types and characteristics, construction, uses.

BREVITY—Identify by IEN - 2354 if you write the maker

BEARINGS . . New house publication suggests methods of bearing maintenance, application

Anti-Friction Bearing Distributors Association
1902 Euclid Ave., Cleveland 15, Ohio

"Bearing Maintenance Report" titles new house publication to be issued at intervals to suggest bearing maintenance methods, describe new bearing developments, show methods of removal. Your name will be added to the list on request.

BREVITY—Identify by IEN - 2355 if you write the maker

BIMETAL . . Application story on how the company's bimetal was designed into a product

W. M. Chace Co.
1603 Beard Ave., Detroit 9, Mich.

Twelve picture sequences in new 8-page bulletin, "How Chace put Buy-Metal into Our Product" describe the company's Application Engineering service for bimetal. A strip of the metal is included so you can try it yourself.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 60

BREVITY—Identify by IEN - 2356 if you write the maker

The Logical First Milling Machine

When you decide to buy your first Milling Machine, make it a Sheldon. This moderate price machine tool can be bought as a basic machine that will come within your budget . . . available with power on hand feed; with or without back gears.

★ ★ ★ ★

Sheldon Milling Machines are rigidly built for continuous, precision service. The spindle is supported in double row Timken Taper Roller Bearings. Fully enclosed variable drive spindle range 100 to 1100 r.p.m. (with back gears, speeds from 25 r.p.m., up). Tapered gibs throughout.

★ ★ ★ ★

Write for complete Catalog which includes specifications and attachments.

Available Accessories and Attachments
Power Feed — Universal Head
Dividing Head — Coolant System
Rotary Table — Swivel Vise
Drip Pot Oiler

SHELDON
CHICAGO
SHELDON MACHINE CO., INC.
4208 N. Knox Ave., Chicago 41, Ill.

BREVITY—Identify by IEN - 2357 if you write the maker

BETTER LIGHT *for* BIGGER PRODUCTION

Fewer rejections . . . greater safety . . . better employee relations . . . increased efficiency to meet defense demands—these are the immediate returns on your investment in good industrial lighting.

Appleton Lighting Fixtures are made to suit every industrial requirement—including hazardous locations—whether indoors or out. For the finest illuminating equipment or expert assistance on any lighting problem, contact Appleton—Standard for Better Lighting.

APPLETON LIGHTING EQUIPMENT

Sold Through Electrical Wholesalers

APPLETON ELECTRIC COMPANY
1716 Wellington Avenue • Chicago 13, Illinois
Branch Offices and Resident Representatives in All Principal Markets

APPLETON
CONDUIT FITTINGS • OUTLET AND SWITCH BOXES • EXPLOSION PROOF FITTINGS • RECEPTACLES

BREVITY—Identify by IEN - 2358 if you write the maker

AMERICAN-Standard
First in heating . first in plumbing

The Sanistand fixture is made of non-absorbent, easily-cleaned, genuine vitreous china. The 18-inch height of the large, properly-shaped bowl offers utmost convenience. It is adaptable to either hand or foot operated flushing valve and has a large water area and outlet for complete sanitation. When used in modernization work the Sanistand fixture can usually replace a water closet.

The Sanistand

URINAL FOR WOMEN

increases sanitation in factory wash rooms
reduces congestion during rest periods

● Wherever the Sanistand fixture has been installed, reports from maintenance managers have definitely proved that this new urinal is ideal for installation in factory rest rooms. Because it is so sanitary, it reduces the amount of time needed for wash room maintenance, and its convenience speeds up use of rest rooms during rush hours. "Requires minimum of maintenance." "The units enable the rest room to handle more than twice the number of women in the same time." (Just two typical comments from the many received to date.)

And women, too, are enthusiastic about the Sanistand fixture. Nearly 90% of the 5,029 women who used it at test installations reported that they were pleased with the idea of a women's urinal . . . and felt that it was the greatest contribution to public sanitation since the development of water closets.

For additional information about this new fixture, see your plumbing contractor or send in the convenient coupon below. **American Radiator & Standard Sanitary Corporation,** Dept. IEN-2, Pittsburgh 30, Pa.

LOOK FOR THIS MARK OF MERIT

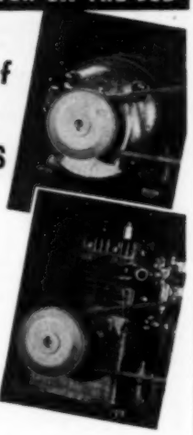
American Radiator & Standard Sanitary Corporation
Dept. IEN-2, Pittsburgh 30, Pa.
Please send me, without obligation, your new Better Rest Room Guide including complete information on the Sanistand fixture.
Name .....
Firm .....
Address .....
City ..... State .....

Serving home and industry: AMERICAN-STANDARD · AMERICAN BLOWER · CHURCH SEATS · DETROIT LUBRICATOR · KEWANEE BOILERS · ROSS HEATER · TONAWANDA IRON

▼ BREVITY—Identify by IEN - 2360 If you write the maker ▼

PUT A MERCURY CLUTCH ON THE JOB

for Easy Starting of
ELECTRIC MOTORS
GASOLINE ENGINES



In starting a direct-coupled motor the torque requirements are greatest and the motor the least effective in the first few seconds of starting time. Installed on an electric motor, a Mercury Clutch permits the motor to reach its full effective operating speed before the load is applied. RESULT: Lower current demand, trouble-free starting, no burned-out motors or blown fuses.

On a gasoline engine a Mercury Clutch allows load-free starting and no-load idling. It eliminates stalling. Write for catalog C-3

Mercury Clutch Division
AUTOMATIC STEEL PRODUCTS INC. • CANTON 6, OHIO

▼ BREVITY—Identify by IEN - 2361 If you write the maker ▼

Do You Have
DEFENSE ORDERS?

Bids - Awards - Contracts?
Need Source of PLYWOOD?

ASK AETNA FIRST

Defense Orders (DO) get first preference. Direct warehouse shipments or carloads from mill made to your specifications, can be supplied by Aetna Plywood.

To interpret Defense Orders, bids, awards, and contracts, depend on Aetna's trained engineers. Aetna's Engineering Department Library has current files on all military plywood specifications. Any questions? Ask Aetna.

Send your Plywood Specifications to Aetna and we'll do our best to match them.

AETNA PLYWOOD & VENEER CO.
1724 N. Elston Ave. Chicago 22, Illinois
ARmitage 6-7100 Teletype: CG305
BRANCH WAREHOUSES: Grand Rapids, Rockford, Indianapolis.
SALES OFFICES: Detroit; Minneapolis; Richmond, Va.; Milwaukee and Green Bay, Wis.; Springfield, Ill.; Marion and W. Lafayette, Ind.
SEE PHONE BOOK

▼ BREVITY—Identify by IEN - 2362 If you write the maker ▼

cut costs · clean efficiently
cold steam

widely used in these industries:
Air Craft
Automotive
Bakeries
Breweries
Cement
Ceramics
Cheese
Construction
Distilling
Electrical
Food Processing
Foundries
Jewelry
Leather
Meat Packing
Machine Shops
Marine
Mining Equipment
Oil & Refinery
Optical
Paper
Pharmaceutical
Public Utilities
Repair Services
Railroad
Rubber
Ship Building
Stone Polishing
Textile
Tobacco
Transportation

✓no back splash
✓blasts stubborn dirt
✓harmless to finest finish

HYDRO-AIR PRESSURE WASHER $9.95

Connects to regular air and hot or cold water supply. Precise control of air and water blasts heavy dirt and grease or rinses sheets and small parts with a penetrating spray.

O & M Products, Inc., 26 N. Raymond Ave., Pasadena 1, Calif.

Order through your supplier or direct. The Hydro-Air washer will be sent post paid.

NEWS NOTES—Continued

"Frozen-mercury process for castings"

▼ BREVITY—Identify by IEN - 2363 If you write the maker ▼

CALCULATING . . Circular cardboard unit for weight and length of strip metal, coiled, straight

Precision Steel Warehouse Inc.
4405 W. Kinzie St., Chicago 44, Ill.

"Coil Weight Calculator" is a cardboard unit 5 in. in diameter intended primarily for cold-rolled strip steel. Scales on the face are set for inside and outside diameter of a coil to read pounds per inch of width. A second set of scales reads total weight over strip width. A third set of scales is set for pounds opposite feet. Factors are given for other metals.

▼ BREVITY—Identify by IEN - 2364 If you write the maker ▼

CALENDAR . . Cartoon illustrations provide humorous touch in the company's 1951 calendar

Minneapolis-Honeywell Regulator Co.
4456 Wayne Ave., Philadelphia 44, Pa.

Troubles that happen in manufacturing plants, in engineering, construction, instrumentation and piping are dramatized by cartoonist Bill Eddy in color illustrations on the company's 1951 calendar. Size when open is 11½ by 18 inches. The company will send you a copy while they last.

▼ BREVITY—Identify by IEN - 2365 If you write the maker ▼

CALENDAR . . Printed on a decal transfer for you to apply to bench, table, desk, wall

Palm, Fechteler & Co.
220 W. 42nd St., Room 1102, New York 18, N. Y.

An inch ruler is combined with a 1951 calendar in new Decalendar transfer available upon request. Size is about 3 by 12 inches. You immerse the unit in water for about 30 seconds, then slide it off its backing to the desired location to form part of a bench, table, wall surface.

▼ BREVITY—Identify by IEN - 2366 If you write the maker ▼

CALENDAR . . For wall use provides space to note daily engagements

Rockwood Sprinkler Co.
36-40 Harlow St., Worcester 5, Mass.

Pages of the company's 1951 calendar measure 12 by 10 inches. They are printed on heavy paper. Each day occupies 1¾ by 1½ inches which is mostly white space so you can write in work to do, engagements to watch for, trouble points to check. Copies are available while the supply lasts.

▼ BREVITY—Identify by IEN - 2367 If you write the maker ▼

CASTINGS . . Frozen-mercury process for precision castings described in new booklet

Alloy Precision Castings Co.
Hamilton Ave. & E. 45th, Cleveland 14, Ohio

Sequence drawings show how the "Mercast" process of making precision castings works, photographs show actual parts in process, examples show scope of the process, all in new 8-page bulletin, "The Ultimate in Precision Castings." There also is a section on testing and inspection.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 2368 If you write the maker ▼

$5520.00 F.O.B. Waverly, Ia. (less truck)

pays DIVIDENDS . . . FAST!

• MOBILE BANTAM® CRANE Lifts up to 10,000 lbs.
• Mounts on new or used truck
• Handles 50′ boom . . . 29″ magnet . . . ⅜ to 1½ cu. yd. buckets (depending on use)
• JOB-PROVED —nearly 2000 Bantams in use, nation-wide distributor service

*Prices subject to change without notice!

Clip this ad now!

Mail with your letterhead for money-saving facts on versatile, truck-mounted Bantam crane. Schield Bantam Co., 254 Park St., Waverly, Iowa.
SB-1-15

SCHIELD BANTAM
Costs less . . . travels 35 m. p. h.
GETS MORE JOBS DONE

▼ BREVITY—Identify by IEN - 2369 If you write the maker ▼

STEVENS MITCHELL
Polishing Lathes

The versatile line of Stevens Polishing Lathes offers these all-star features: ADJUSTABLE MOTOR BASE • SINGLE OR DOUBLE SPINDLES • CONSTANT OR VARIABLE SPEEDS • INSTANT ACTION FOOT BRAKE. The adjustable motor base simplifies service and inspection and provides easy adjustment of texrope drive. Heads are balanced and allow ample clearance for large work pieces. Spindles are self-aligning with either ball or roller bearings. Safety Foot Brake with motor cutout gives split-second emergency stopping. You'll find Stevens lathes with their rugged construction and advanced design will assure you of trouble-free, long-lived operation. See your Stevens representative for complete details or write direct to FREDERIC B. STEVENS, INC., DETROIT 16, MICHIGAN.

STEVENS OVERHANGING HEAD LATHE
Motor is mounted near the head—out of the dust area. Head is perfectly balanced because of motor location and permits handling of exceptionally large work pieces. Other models available with single or double heads—constant or variable speeds.

▼ BREVITY—Identify by IEN - 2370 If you write the maker ▼

KIPP Air Grinders

• FASTER SPEEDS
• BETTER RESULTS
• LOW PRICES

MODEL JA
30,000 R.P.M.
Weight 12 ounces; length 6¾ inches; chuck size ⅛ inch. Wheel guard removed for better illustration.

$42 IN U.S.A.

THEY GRIND--NOT JUST RUB!

The RPM's stay up while grinding . . . not only when the grinder runs idle.

It is an established fact that surface speeds must stay up to approximately a mile a minute if you want to grind . . . not just rub. Every mechanic knows this, but an inexperienced buyer may order tools that maintain proper grinding speeds only when running idle. The speed of Kipp air grinders drops but slightly when put to work. That means better work . . . longer wheel life.

MADISON-KIPP CORP.
224 Waubesa St., Madison, Wis., U. S. A.

Write for KIPP Air Tool Catalog AT 3006

▼ BREVITY—Identify by IEN - 2371 If you write the maker ▼

"DY-NAMIC BALANCING of ARMATURES CUTS BEARING TROUBLE!"
—say hundreds of users of "Bear" Dy Namic Balancing Machines.

INVESTIGATE THE "BEAR" METHOD, if Dy-Namic Balancing of rotating parts is a stranger to your plant! Find out how this PROVEN technique reduces wear of valuable machinery . . . eliminates noise, vibration . . . improves efficiency of finished product!

FREE Dy-Namic Balancing Manual TELLS ALL!

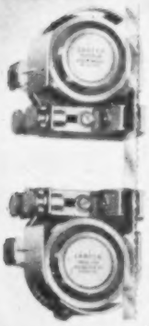
Bear Mfg. Co., Dept I-B, Rock Island, Ill.

"BEAR"
STATIC AND DY-NAMIC BALANCING MACHINES

BREVITY—Identify by IEN - 2372 if you write the maker

Carter

CUTS COSTS WAY DOWN!



CARTER MICRO-PRECISION GUIDE

Now! Carter introduces its new line of ball-bearing and Oilite Precision Guides for all sized bandsaws. Carter products universally accepted as standard equipment by leading bandsaw manufacturers.

MODEL	LARGE	MED.	SMALL
BALL BEARING WHEEL	$15.00	$13.50	$12.00
OILITE WHEEL	$10.00	$ 8.50	$ 7.00
SAWS	1/8"-1 3/4"	1/16"-1 1/4"	1/16"-3/4"

PRICES SUBJECT TO CHANGE

Write For free illustrated folder!

CARTER PRODUCTS COMPANY INC.

57 Mount Vernon, N. W. • Grand Rapids 4, Mich.

BREVITY—Identify by IEN - 2373 if you write the maker

NOW!

A SURE WAY TO PRODUCE MIRROR FINISHES, FASTER!

DYMO FINISHING

Tested and proved by hundreds of industrial users on plastic molds, carbides, drawing dies, precision parts, and cutting tools.

You can reduce finishing and polishing time in your shop and get mirror finishes every time—with DYMO FINISHING. Write today for free demonstration—proof of DYMO FINISHING advantages.

INDUSTRIAL PRODUCTS DIVISION
ELGIN NATIONAL WATCH COMPANY
ELGIN, ILLINOIS

BREVITY—Identify by IEN - 2374 if you write the maker

Only AMERICAN WEDGBELT® SHEAVES give you the advantages of TAPER-BUSHED HUBS

on both Multiple-Groove Fixed-Pitch Sheaves

and

Multiple-Groove Adjustable-Diameter Sheaves.

Only American Wedgbelt Sheaves give you the advantages of quicker assembly, easier breakaway yet maximum clamping action in both fixed-pitch and adjustable-diameter multiple-groove sheaves. Assembly is quicker because of one-piece, accurately-machined bushings—breakaway is easier because of the exclusive "perfected taper" of American Wedgbelt bushings—maximum clamping action is assured because the bushings are split all the way through. In addition, precision manufacturing assures accurate, long-wearing grooves and balanced, vibration-free operation. Look to American as your source of supply for all V-belt drive products: Taper-bushed Standard Wedgbelt Sheaves, Double-Taper Adjustable-Diameter Wedgbelt Sheaves, F.H.P. Sheaves and F.H.P. and Multiple Wedgbelts. Mail the coupon below for full information on the complete line of American Wedgbelt Drives.

The American Pulley Company 4242 Wissahickon Ave., Phila. 29, Pa.
Please send me information on American Wedgbelt Drives.
NAME_____ TITLE_____
COMPANY_____
ADDRESS_____
CITY_____ ZONE_____ STATE_____

NEWS NOTES—Continued

"How to clean metals electrolytically"

BREVITY—Identify by IEN - 2375 if you write the maker

CASTINGS . . New house publication to keep you up to date on steel casting developments

Atlantic Steel Castings Co.
Lloyd & Sixth Sts., Chester, Pa.

"Atlantic Axioms" titles new house publication to be issued at regular intervals to post you on progress in steel castings and on the company's production service. Your name will be added to the list on request. Please use your letterhead.

BREVITY—Identify by IEN - 2376 if you write the maker

CLEANING . . Useful information in bulletin on electrolytic cleaning of metals

DuBois Co.
1118-22 W. Front St., Cincinnati 3, Ohio

Revised edition is announced for "An Introduction to Electrolytic Cleaning", company's information booklet issued as 10 typewritten sheets. The booklet covers fundamentals, basic circuits, equipment and its operation, materials.

BREVITY—Identify by IEN - 2377 if you write the maker

DIE CASTINGS . . Annual award for work that advances die-casting progress

American Die Casting Institute
366 Madison Ave., New York 17, N. Y.

Closing date is April 30 for nominations and supporting evidence on entries for the annual Doehler Award by the Institute. It is given to individuals or groups judged to have made an outstanding contribution to die casting.

BREVITY—Identify by IEN - 2378 if you write the maker

FLOORS . . Conductive resurfacing material is returned to production, dissipates static charges

Rock-Tred Corp.
7438 N. St. Louis Ave., Skokie, Ill.

Condurock is a floor surfacing material that conducts static electricity to ground and so prevents accumulation of a charge that might result in a spark. It was developed in 1943, previously described IEN-747-43, for floors, aisles, walks, loading platforms, ramps, stair treads, table tops, work-bench surfaces in plants handling powder, igniter composition, tracer and primer mixtures, mercury fulminate. The material has a mastic base, is supplied ready to place. It is dark red in color, can be cleaned by the usual methods. Packaging is in 30-gal. drums.

BREVITY—Identify by IEN - 2379 if you write the maker

FASTENINGS . . Types of locknuts and their applications reviewed in booklet

Industrial Fasteners Institute
3646-50 Euclid Ave., Cleveland 15, Ohio

Essential features of 23 locknut designs are illustrated and described in new 20-page booklet, "Types of Locknuts," available on request from the Institute. Principle of operation is emphasized and the manufacturer's name given for each.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2380 if you write the maker

"The FRICK Unit Air Conditioner Saved Our Candies"

Says Hupper's Confectionery at Lancaster, Penna.

Here a 5-hp. Frick unit cools a room measuring 53 to 23 feet, protecting a large display of chocolates, and keeping customers comfortable. Installation by Marr Engineering Co., Frick Distributors at Reading, Penna.

There's a Frick Air Conditioning System to suit the exact needs of every business. Unit conditioners are furnished in 5- and 7½-hp. sizes; are excellent for offices, shops, inspection rooms and process departments.

FRICK CO. Waynesboro, Penna. U.S.A.
Also Builders of Power Farming and Sawmill Machinery

BREVITY—Identify by IEN - 2381 if you write the maker

The REEVES VARI-SPEED Jr.

ANY SPEED YOU NEED without stopping your machines!

• Now, you can equip your light horsepower machines with variable speed control at small cost. Operating on the time-tested principle of the famous REEVES Transmission, the REEVES Vari-Speed Jr. is simple in design, trouble-proof in operation and is easy to install. Gives any speed within the range of 1¼:1 to 2¾:1 simply by turning a handwheel, and without stopping the machine. Ideal for saws, lathes, drill-presses, grinders, blowers, ovens, etc. Mounts on shaft of any standard motor from ⅙ to 1½ hp. Uses standard V-belt and driven pulley. Sliding motor base furnished, if desired, at low extra charge, or you can rig up your own pivoting base using our instructions. Illustrated literature and simple chart enable you to select and install correct unit yourself. Write today for Bulletin IN37a-4912.

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

REEVES Variable Speed Control

BREVITY—Identify by IEN - 2382 if you write the maker

TOOL CRIB CONTROL

New illustrated bulletin presents step-by-step procedure used profitably in hundreds of plants.

How it works to—

- Record each employee's tools or gages, preventing theft and loss;
- Recover idle tools;
- Cut crib inventories;
- Reduce tool breakage;
- Locate each tool, loaned or in crib;
- Eliminate delays, saving man and machine time;
- Stop arguments and otherwise speed service;
- With no increase in crib personnel—

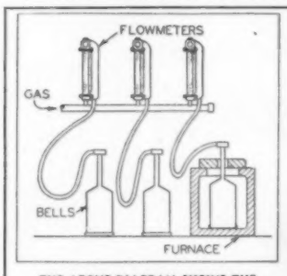
All described in Folder A-5101EN

Complete control of your tools will save head-aches in the months ahead.

Write for your copy today to:
The McCaskey Register Company, Alliance, Ohio

McCASKEY INDUSTRIAL CONTROLS
PRODUCTION • TOOLS • INVENTORY • COSTS • MAINTENANCE

BREVITY—Identify by IEN - 2383 if you write the maker



MEASURE YOUR GAS FLOW TO RETORT OR MUFFLE

THE ABOVE DIAGRAM SHOWS THE PRINCIPLE OF OPERATION OF

AGF FLOW METERS

THE ILLUSTRATION AT THE RIGHT SHOWS THE ACTUAL METER

FOR GAS CARBURIZING IN

ROTARY AND VERTICAL RETORT CARBURIZERS, THESE METERS PERMIT MAINTENANCE AND DUPLICATION OF ATMOSPHERE GAS BLOWERS.

Made by the PIONEERS in gas furnace equipment.

Write for Bulletin No. 700

American Gas Furnace Co.
Elizabeth, New Jersey
974 LAFAYETTE STREET

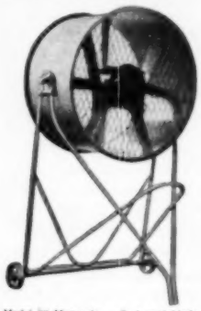
BREVITY—Identify by IEN - 2384 if you write the maker

ADD COMFORT . . . SPEED PRODUCTION

with Aerovent

MAN COOLING

FANS



Keep your employees cool for more efficient work. Aerovent "Machera" airfoil fans are efficient and economical.

Certified Ratings PFMA

Model 39 Manoeuver — 2, 4 or 6 blade Sizes 24" to 48"
Other Models: Direct Connected, Extended Shaft, Duct Type, Belt Driven, Pulley Drive. Sizes 12" to 144".

WRITE TODAY FOR ENGINEERING BULLETIN

AEROVENT FAN CO., Inc.

Ash & Brown Streets, Piqua, Ohio

Competent Sales Engineers in Principal Cities

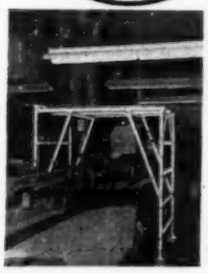
BREVITY—Identify by IEN - 2385 if you write the maker

SAVE up to 70% with

Aluminum Alloy

"UP-RIGHT" SCAFFOLDS

NEW, FASTER, SAFER WAY TO GET UP IN THE AIR & ROLL WITH THE JOB



30' Mobile

TOWER SCAFFOLD

which took only 10 minutes to erect. A tower of any other height desired can be erected by using the required number of standard 6' or shorter sections. Each one-piece section is easily handled by one man.

Mobile 6', 8' or 10'

SPAN SCAFFOLDS

"The only way to get over looms and spinning frames", reports textile plant manager. Ideal for narrow aisles and cluttered areas in any factory.

ROLL-AROUND and SAFETY CAGE

Provides new, faster method for covering entire wall areas of tanks. Can be rigged by one man. Roll-Around is anchored to eye-bolt on top of tank. Safety cage is raised or lowered while rolling around.

WRITE FOR DESCRIPTIVE CIRCULAR

"UP-RIGHT" SCAFFOLDS

DEPT. 142 • 1013 PARDEE ST. • BERKELEY, CALIF.

FACTORIES: BERKELEY, CALIF. • TETERBORO, N. J.

• OFFICES IN ALL PRINCIPAL CITIES •

BREVITY—Identify by IEN - 2387 if you write the maker

WEIGHING . . Dial type scale suspends from crane hook, to 10 ton

Source: W. C. DILLON & CO.
1419-23 S. Circle Ave., Forest Park, Ill.

The dial in this new design of the company's Weight Indicator load-suspending scale is 10 in. in diameter. It is made of aluminum and carries permanent large black figures on a silver background back of a cover made of tempered Herculite glass. A counterbalanced pointer with a knife-edge tip is finished in bright red for sharp visibility against the scale dial.

The scale is available in eight capacities maximum at 250 lb. to 10 ton in ½ to 50-lb. divisions. List price is about $194 to $617. A plastic cover glass or safety glass and a steel-mesh shield can be specified. Each lists at $5.

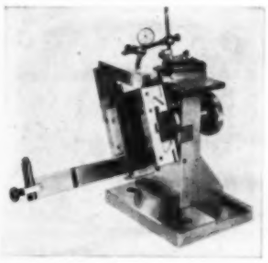
The mechanism employs the company's calibrated tapered-beam design in which the beam is set in hardened pivots and is deflected by compounded leverage when a load is applied on the ball-bearing swivel hook at the bottom of the steel housing. Movement of the beam is transmitted to a gage mechanism on which the pointer is mounted. Downward movement of the scale hook between zero and full load is about ⅛ inch. Overall height between the top of the suspending eye bolt and the bottom of the hook is about 28 inches. Scale weight is 42 lb. in capacities to 2½ ton. It is 68 lb. in the 5 to 10-ton sizes.

Compensation is provided for tare load by turning a slotted set screw in accordance with instructions supplied with each unit. Maximum tare load is 50 lb. on the 250-lb. scale. It is 4,000 lb. on the 10-ton assembly.

BREVITY—Identify by IEN - 2388 if you write the maker

GRINDING . . Universal dresser produces form on grinding wheel face

Source: UNIVERSAL FORM TOOL CO.
7408-12 Rutherford, Detroit 28, Mich.



Preloaded ball-bearing angle slides and rotating bearings and positive locks and stops make it possible for this new universal dresser to produce a simple or compound form on a grinding wheel to exact contour and continuity. It will dress any convex radius to 3½ in. or concave radius to 5½ inches. The standard gooseneck will apply under a 12-in. wheel to dress a 2-in. convex radius maximum. An extension attachment is available for wheels to 14 inches. Application can be made as a revolving fixture with the gooseneck removed.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2389 if you write the maker

IT'S **ALLIED** FOR **RCA** SPECIAL-PURPOSE TUBES FOR INDUSTRY

All Types in Stock
- Vacuum Power
- Thyratrons
- Vacuum & Gas Rect.
- Ignitrons
- Cold-Cathode
- Phototubes
- Oscillograph Tubes
- Camera Tubes
- Monoscopes
- Special Types

the world's largest distributors of RCA special-purpose tubes

ALLIED maintains *in stock for quick shipment* the world's largest inventory of RCA special-purpose electron tubes—*of all types*. We specialize in supplying the tube needs of industrial, broadcast, governmental and other users. Shipments are made *from stock* to any part of the nation within hours after we receive your order. Fill *all* your tube needs from a *single, dependable source*.

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Valuable guide to selection of proper RCA tube type replacements. Lists 1600 tube types. Write for FREE RCA Guide No. 37-046.

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Make ALLIED your central supply source for *all* electronic supplies—parts, tubes, test instruments, tools, audio amplifiers, accessories—available *immediately* from the world's largest stocks. Order from your ALLIED Catalog—the leading Electronic Buying Guide. Ask for your FREE copy.

ALLIED RADIO

833 W. Jackson Blvd., Chicago 7, Illinois

BREVITY—Identify by IEN - 2390 if you write the maker

Be fresh Stay fresh

wear a **DUPOR NO. 40**

THE RESPIRATOR THAT IS U. S. B. of M. APPROVED FOR TYPE "A" DUSTS

Guards against pneumoconiosis and silicosis producing dusts. Has over 40 sq. in. twin filter area. Sanitary face cloth. Soft rubber face mask. "Controlled-breathing" valves. Wearer has a panorama view with no blind spots. Unusual rubber, felt and plastic construction makes it extra durable, no denting or bending possible. Efficiency remains unimpaired even after rough treatment.

Sample sent $2.75 pp

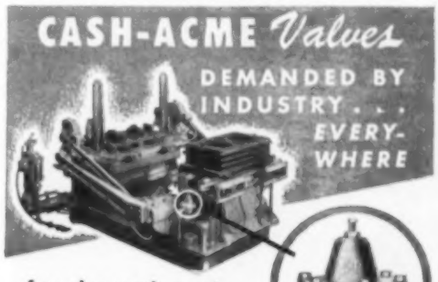
H. S. COVER

South Bend, Ind.

BREVITY—Identify by IEN - 2391 if you write the maker

CASH-ACME *Valves*

DEMANDED BY INDUSTRY . . . EVERYWHERE



foundry equipment manufacturer specifies

CASH-ACME

In the foundry equipment shown above, CASH-ACME Pressure Reducing and Regulating Valves withstand the rigors of constant operation found in this heavy industry. Here's actual proof of CASH-ACME superiority. During this period of possible shortages, specify automatic valves that last the life of your equipment . . . CASH-ACME. Let us tell you about the ever-growing number of cases where CASH-ACME Valves have been specified and perform successfully in dozens of industries. Write for this list of case histories and free literature describing the part CASH-ACME Automatic Valves can play in the successful operation of your products.

CASH ACME SILENT SENTINEL *Automatic Valves*

A. W. CASH VALVE MANUFACTURING CORP.
6612 E. Wabash Avenue
Decatur, Illinois

BREVITY—Identify by IEN - 2392 if you write the maker

ROCKWOOD

SG-48 WaterFOG NOZZLE

FASTER and MORE EFFICIENT with ORDINARY WATER

Will out-perform any other fog nozzle operating on either high or low pressures for all around fire fighting purposes. Discharges (1) high velocity WaterFOG (2) straight stream (3) low velocity WaterFOG. Extinguishes fires in flammable liquids and ordinary combustibles faster and with less water. Designed for use in industrial plants, chemical plants, oil refineries, mercantile and public buildings and municipal fire departments, etc.

Approved by Underwriters' Laboratories, Inc. and Factory Mutual Laboratories.

Write for bulletin C-501R.

ROCKWOOD SPRINKLER CO.
40 HARLOW STREET WORCESTER 7, MASS.

BREVITY—Identify by IEN - 2393 If you write the maker

Next winter, keep heat and heating costs from

"HITTING the CEILING"

Thermolier Unit Heaters are the most economical answer to many tough heating problems. Easy to install and to relocate at any time to meet changes in plant layout or heating requirements. Waste no valuable floor or wall space. Aim heat where you need it. You pay only for heat you use . . . instead of banking heat wastefully up at the ceiling. Heat is turned on and off by throwing a switch, manually or automatically by simple thermostatic controls. Thermoliers have a patented internal cooling leg which permits use of inexpensive, simple thermostatic trap. Write for full descriptive catalog.

Thermolier Unit Heaters

GRINNELL

Grinnell Company, Inc., Providence 1, R. I.
Branch Warehouses in principal cities.

BREVITY—Identify by IEN - 2394 If you write the maker

The following is from "Turret Topics," the WARNER & SWASEY CO House Organ:

"After machining, Gradall parts, such as gear boxes, digging tools, reservoirs, etc., are thoroughly cleaned before painting to remove all grease, dirt and cutting compounds. Parts for the Automatic are also steam cleaned before final assembly, often at a substantial saving in time. One Automatic part, for example, required four hours of cleaning time in assembly. The steam room did a better job in 45 minutes.

The steam cleaning process is a simple one. A mild soap powder is dissolved in water. Then in an oil heated "Jenny" the solution is converted into steam. A long hose from the "Jenny" allows the operator to direct the steam into all the hidden crevices of a part."

HYPRESSURE JENNY can save man-hours and money for you, too. Write today!

HYPRESSURE JENNY DIVISION
HOMESTEAD VALVE MANUFACTURING CO.
"Serving Since 1892"

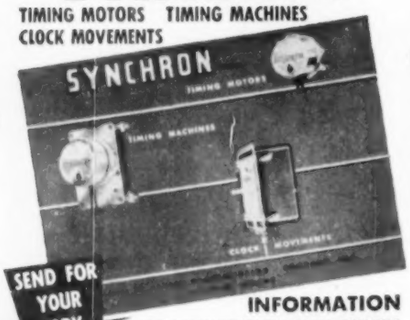
P. O. BOX 85 • CORAOPOLIS, PA.

BREVITY—Identify by IEN - 2395 If you write the maker

READY NOW! CATALOG NO. 50

SYNCHRON

TIMING MOTORS TIMING MACHINES
CLOCK MOVEMENTS



SEND FOR YOUR COPY

INFORMATION FOR DESIGNERS OF TIMING DEVICES

HANSEN MANUFACTURING CO., INC.
Princeton 2, Indiana (3-51)

Please send SYNCHRON Catalog No. 50.

Name _____
Position _____
Firm _____
Address _____
City _____ Zone _____ State _____

NEWS NOTES—Continued

"Microfilm service for engineering drawings"

BREVITY—Identify by IEN - 2396 If you write the maker

INSULATING . . Cardboard slide calculator for loss, temperature, pipe insulation efficiency

Union Asbestos & Rubber Co.
1819-23 S. 54th Ave., Cicero 50, Ill.

Moving a slide in new 4⅝ by 8½-in. "Fact Finder" calculator sets an arrow against pipe size from 1 to 18 in. and insulation thickness of 2 to 5½ inches. Windows read corresponding heat loss, surface temperature and efficiency for two types of the company's "Unibestos" pipe insulation.

BREVITY—Identify by IEN - 2397 If you write the maker

LIGHTING . . Suggested lamp replacement plan in bulletin on industrial lighting maintenance

General Electric Co.
1 Nela Park, Cleveland 12, Ohio

"Why Lighting Maintenance" is an 8-page bulletin that prints two articles from the company's house publication. The first describes lighting as a production tool. The second advocates replacing all fluorescent lamps after 20 per cent have failed, saving 20 per cent as spares.

BREVITY—Identify by IEN - 2398 If you write the maker

LUBRICATING . . Booklet recommends grades of lubricant by type of industry and type of service

Fiske Brothers Refining Co.
127-31 Lockwood St., Newark 5, N. J.

Revised 56-page edition of Data Book 1-50 on the company's Lubriplate materials presents specific recommendations on where to use them. These are grouped into 29 industry classifications with grade designations listed by equipment under each. Application instructions and distributors are given.

BREVITY—Identify by IEN - 2399 If you write the maker

LUBRICATING . . ABC information on lubricating equipment for machine use

Socony-Vacuum Oil Co.
26 Broadway, 10th Floor, New York 4, N. Y.

"Lubrication Devices" is a 4-page bulletin that reprints an article from the January issue of "Oil-Power", company's house publication. It describes machine-lubrication equipment such as oil cups, bottle oilers, grease cups, including a note on types, characteristics and applications of each.

BREVITY—Identify by IEN - 2400 If you write the maker

PRINTING . . Microfilm service for engineering drawings described in booklet

Micro-Photo Service Bureau
4612-16 Prospect Ave., Cleveland 3, Ohio

Questions and answers are employed to present information on the company's microfilm reproduction service in new 16-page booklet, "Facts and Figures on Microfilming Engineering Drawings." Storage and projector equipment are illustrated. There is a note on microfilming classified material.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 2401 If you write the maker

FLEXCO ®

BELT FASTENERS and RIP PLATES

FOR HEAVY CONVEYOR AND ELEVATOR BELTS OF ANY WIDTH

★ FLEXCO Fasteners make tight butt joints of great strength and durability.
★ Trough naturally, operate smoothly through take-up pulleys.
★ Distribute strain uniformly.
★ Made of Steel, "Monel," "Everdur." Also "Promal" top plates.
★ FLEXCO Rip Plates are for bridging soft spots and FLEXCO Fasteners for patching or joining clean straight rips.

Compression Grip distributes strain over whole plate area

Order From Your Supply House. Ask for Bulletin F-100

FLEXIBLE STEEL LACING CO.
4610 Lexington St., Chicago 44, Ill.

BREVITY—Identify by IEN - 2402 If you write the maker

ALLEN TRU-ROUND DRYSEAL PIPE PLUGS

100% PRESSUR-FORMD.

- NEVER OUT OF ROUND
- LEAKPROOF METAL-TO-METAL SEAL
- FULL STRENGTH SOCKET WON'T STRIP OR WEAR

Ideal for extreme pressure applications. For use with dryseal taps. No sealing compound required. Pressur-Formd socket, unweakened by drilling and broaching, is stronger than the strongest key. Pressur-Formd burnished threads are nick and distortion-free, insure perfect thread contact, won't gouge softer metals. Perfect taper plus 360° roundness at both pitch and crest diameters assure accurate fit. Now available in 1/16" to 1¼" sizes. No increase in price.

Sold only thru leading distributors. Write direct for samples and engineering data on Allen Dryseal plugs, also Allen Tru-Round *Standard* Pressure-Formd plugs for a better seal in normal applications.

WARNING
Allen-TYPE screws aren't necessarily Allen-MADE. Be sure to get genuine Allens in the black and silver box.

ALLEN ALLEN HEAD
MANUFACTURING COMPANY
Hartford 2, Connecticut, U. S. A.
NEW YORK CLEVELAND DETROIT CHICAGO LOS ANGELES

BREVITY—Identify by IEN - 2403 If you write the maker

The Dye Penetrant indicates surface flaws in brilliant red against white Developer.

WORKS ON ANY METAL...ANYWHERE

dy/chek COMPANY

Send Today for Complete Information

division of Northrop Aircraft, Inc.
1529 East Broadway, Hawthorne, California

dy/chek *the dye penetrant inspection method*

BREVITY—Identify by IEN - 2404 If you write the maker

For DEFENSE PROGRESS—

. . . INCREASE your Personnel's

VISUAL EFFICIENCY

Accidents lessen production and increase spoilage—and poor vision is one of the most important contributing causes of accidents.

Now is the time to install a Keystone Occupational Visual Service. A sampling test, run on a group of your own employees, will show that a Visual Testing program will give you the results that thousands of plants are reporting:

LOWER production costs and training costs; lower labor turnover; less spoilage; reduced accident and insurance rates. **INCREASED efficiency,** larger profits; increased employee satisfaction.

Write for circular: **KEYSTONE VIEW COMPANY,** Meadville, Penna. Established 1892. Originators of Binocular Vision Testing in Industry.

KEYSTONE
Occupational Visual Service

BREVITY—Identify by IEN - 2405 if you write the maker

Increased Insulation
BETTER CONNECTIONS
JONES BARRIER TERMINAL STRIPS

Leakage path is increased—direct shorts from frayed terminal wires prevented by bakelite barriers placed between terminals. Binder screws and terminals brass, nickel-plated. Insulation, black molded bakelite. Finest construction. Add much to equipment's effect.

Jones Means Proven Quality

Illustrated: Screw Terminals—Screw and Solder Terminals—Screw Terminal above Panel with Solder Terminal below. Every type of connection.

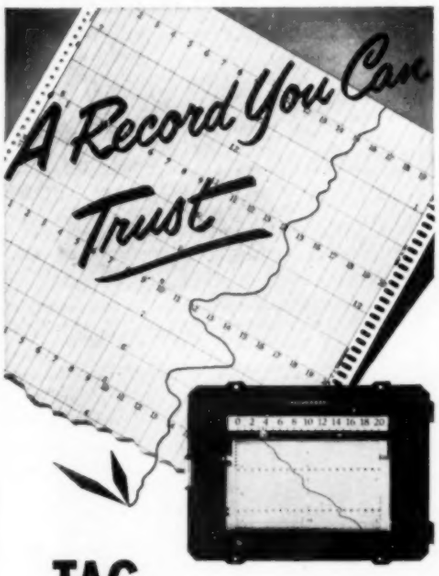
Six series meet every requirement: No. 140, 5-40 screws; No. 141, 6-32 screws; No. 142, 8-32 screws; No. 150, 10-32 screws; No. 151, 12-32 screws; No. 152, ¼-28 screws.

Catalog No. 17 lists complete line of Barrier Strips, and other Jones Electrical Connecting Devices. Send for your copy.

Send for complete data on this new basic improvement!

Jones HOWARD B. JONES DIVISION
CINCH MANUFACTURING CORPORATION
CHICAGO 24, ILLINOIS
SUBSIDIARY OF UNITED-CARR FASTENER CORP.

BREVITY—Identify by IEN - 2406 if you write the maker



TAG

CELECTRAY Recorder

Many instruments in one—that's this adaptable TAGliabue Celectray recorder. Connected to a thermocouple, it's a sensitive, quick-response furnace pyrometer. Teamed with photoelectric cells it's a light recorder. Or calibrated for use with related Weston instruments, it records slip, stretch, speed ratios, voltage, current, single phase or polyphase power.

Celectray recorders, operating on the inertia-less light-beam principle, are available in Wheatstone Bridge or Potentiometer types for recording as many as twelve points on one chart. Wherever you need to record variables expressed as potentials or resistances, count on TAG Celectray instruments for *a record you can trust.*

TAGLIABUE INSTRUMENTS DIVISION
Weston Electrical Instrument Corporation
614 Frelinghuysen Avenue • Newark 5, New Jersey

TO MEASURE THE MOISTURE . . . THERE'S A METER BY TAG

BREVITY—Identify by IEN - 2408 if you write the maker

TESTING . . Air conditioner to serve product testing enclosures

Source: TENNEY ENGINEERING INC.
24-28 Avenue B, Dept. C, Newark 5, N. J.

Servo Unit is a new portable air-conditioning unit for attachment to various types of laboratory enclosures, such as impact machines, tension machines, tempering cabinets, torsion testers, vibration testers, cold boxes in which products are placed for test, for aging or for weathering under variable conditions of humidity, heat and cold. The unit will circulate 40 cfm., is capable of absorbing 1,700 btu. per hour at minus 100 deg. F. or of delivering 5,000 btu. per hour of heating effect at plus 167 deg. F.

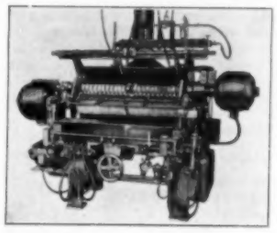
An attachment can be added to produce sufficient humidification to maintain 95 per cent of relative humidity at 120 deg. F. in 40 cu. ft. of recirculated air. Overall dimensions of the unit are 17 by 17 by 31 inches. Weight is 165 pounds. Dry ice is employed for low-temperature operation at the rate of 10 lb. per hr. at minus 100 deg. F. and ¾ lb. per hr. under static conditions.

Test chambers in various designs and three basic types of control equipment are available to specification. One of the three will control specific temperature or pressure. A second maintains desired temperature and humidity. The third controls changing conditions or operates a program cycle.

BREVITY—Identify by IEN - 2409 if you write the maker

POLISHING . . Roll type machine to finish contour work surfaces

Source: CLAIR MFG. CO.
1004 S. Union St., Olean, N. Y.



Work holding rack in this new No. 204 surface-finishing machine is operated hydraulically to move contoured work pieces, such as spoons or forks, in and out between two sets of parallel buffing rolls. The upper units are individual and small in diameter. The lower ones are considerably larger as shown in the illustration. The machine provides an overall work width of 38 in. with 40-in. roll assemblies. Individual motors drive the roll shafts and the machine's hydraulic mechanism.

Compressed air is employed to retract and advance the rolls and to back up a floating action so the counter-balanced rolls will follow irregular contours. Provision is made for adjustment of speed and of roll movement without stopping the machine. Each assembly is supplied to handle specified work.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 2410 if you write the maker

Can you use Clear Glass that conducts electricity?

Get your copy of this specification folder giving complete details useful to designers of:

- Marine Vessels
- Aircraft
- Railroads
- Automotive Equipment
- Heating & Drying Elements
- Radio & Television Transmitters
- Scientific Instruments
- Industrial Equipment

Electrapane®, the current-conducting glass recently developed by Libbey-Owens-Ford Glass Company, is a clear glass with a transparent micro-thin metal oxide coating that conducts electric current.

Proved-in-use applications include resistance heating, de-icing, electrostatic dissipation, radio frequency shielding and similar uses. For specifications and further information, write for Bulletin M-11.

®

LIBBEY·OWENS·FORD GLASS COMPANY
8631 NICHOLAS BLDG.
TOLEDO 3, OHIO

BREVITY—Identify by IEN - 2411 if you write the maker

"BUILT-IN" FEATURE

SAVE OVER 50% FLOOR SPACE THE HAMMOND WAY

Hammond OF KALAMAZOO

NO-DUST GRINDER

- Requires only 6½ square feet.
- Protects employees' health.
- Protects nearby machine tools against excessive wear from dust and grit.

A self-contained Grinder and Dust Collector for 10", 12" and 14" wheels. Write for Bulletin No. 104.

Hammond Machinery Builders
1607 DOUGLAS AVENUE • KALAMAZOO 54, MICHIGAN

BREVITY—Identify by IEN - 2412 if you write the maker

Dick 960 A B Dick 960 A B Dick 960
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NEW A. B. DICK MIMEOGRAPHS

black-on-white **COPIES** or colored copies of anything typed, written or drawn

produced **FAST** on most all paper and card stocks at speeds ranging up to 180 copies per minute . . .

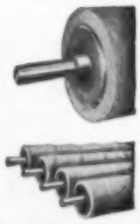
and **EASY** on today's A. B. Dick mimeographs with many new features and improvements for more efficient operation.

WRITE TODAY for full details

A B DICK COMPANY
5700 Touhy Ave. • Chicago 31, Illinois
For use with all makes of suitable stencil duplicating products.

BREVITY—Identify by IEN - 2413 if you write the maker

MANY INDUSTRIAL **ROLL** PROBLEMS are solved by using



SHAF-TITE® ROLLS

Many patented constructions provide strongest possible shaft setting. Your choice of many different types and materials—wood, rubber, iron, brass, stainless steel plastic, etc. Whatever your roll problem, put it up to Rodney Hunt.

SEND FOR NEW CATALOG NO. 48
Most complete publication of its kind

Industrial Roll Division
RODNEY HUNT MACHINE CO.
173 Main Street, Orange, Mass.

*Reg. U. S. Pat. Off.

BREVITY—Identify by IEN - 2414 if you write the maker

DELTA-MILWAUKEE® 13" WOOD PLANER

Ahead in design! Advanced in performance!

Handles big stock up to 13" x 5" — short 6" stock unbutted.
Exclusive! Has fingertip clutch control.
Exclusive! Has depth scale you can read from any position.
Exclusive! Individual blade adjustment and simplified measuring device make blade-setting easy.
Exclusive! Change cutterhead without taking machine apart.

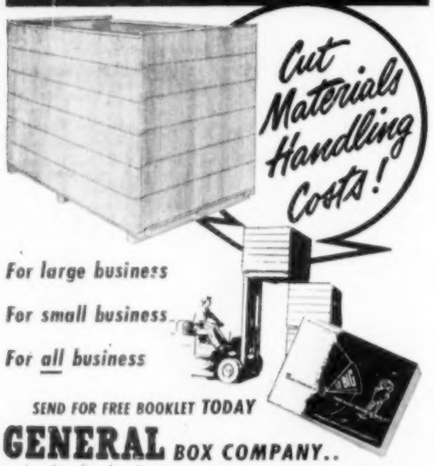
Get further facts! Send for free bulletin AD-633.

DELTA POWER TOOL DIVISION Rockwell Manufacturing Company

WM-46 615C E. Vienna Avenue, Milwaukee, Wisconsin

BREVITY—Identify by IEN - 2415 if you write the maker

Generalift PALLET BOXES



For large business
For small business
For all business

SEND FOR FREE BOOKLET TODAY

GENERAL BOX COMPANY.. ★★★★★ engineered shipping containers

GENERAL OFFICES: 508 N. Dearborn St., Chicago 10, Ill.
DISTRICT OFFICES AND PLANTS: Cincinnati, Danville, N. J., Detroit, East St. Louis, Kansas City, Louisville, Milwaukee, Sheboygan, Winchendon.
Continental Box Company, Inc., Houston, Dallas.
General Box Company of Mississippi, Meridian, Miss.

BREVITY—Identify by IEN - 2416 if you write the maker

Free Booklet

Gives you the inside facts on amazing multi-purpose thermostat

Find out *now* how Fenwal THERMOSWITCH Units can give you unique control of heat, humidity, vapor level, radiant heat, pressure and other variables. See how single-metal shell expands or contracts *instantaneously* with temperature changes, making or breaking totally enclosed electrical contacts. Fast, accurate, sensitive . . . and low in cost.

Fenwal THERMOSWITCH® The Precision, Multi-Purpose, Thermostat Control

SENSITIVE...*but only to heat*

MAIL TODAY

FENWAL, INC., 73 Pleasant St., Ashland, Mass.
111 South Burlington Ave., Los Angeles 4, Cal.
Temperature Control Engineers

Please send me the Fenwal booklet "Everything you want in a thermostat."

Name ..... Position .....
Company .....
Street .....
City ..... Zone ..... State .....

NEWS NOTES—Continued

"How to handle personnel problems"

BREVITY—Identify by IEN - 2417 if you write the maker

MANPOWER . . Wage policy and problems in a preparedness economy the subject of new booklet

American Management Association
330 W. 42nd St., New York 18, N. Y.

Impact of the mobilization program on wages and salaries and upon collective bargaining is described in new 36-page Booklet 136 in the Association's Personnel Series. It includes views of management and labor, together with a note on trends in the wage and salary picture. List price is $1.25.

BREVITY—Identify by IEN - 2418 if you write the maker

MANPOWER . . How to handle personnel problems described by examples in new 220-page looseleaf manual

National Foremen's Institute Inc.
102 Garfield Ave., New London, Conn.

"Labor Relations Work Kit" consists of a standard three-ring binder and letter-size sheets which describe some 60 specific labor-relations and personnel problems. Methods suggested to answer these problems are taken direct from existing practice in one or more companies. The manual lists at $7.50, covers such topics as recruiting methods, absenteeism, stimulating output, tightening up on discipline, compensating foremen for overtime, employee parking lots, handling groundless complaints, discouraging careless work, running an employee picnic, encouraging after-hours education.

BREVITY—Identify by IEN - 2419 if you write the maker

MANPOWER . . Handbook on personnel to assist in handling a program or specific problems

Ronald Press Co.
15 E. 26th St., New York 10, N. Y.

"Personnel Handbook" titles new 1,180-page book, list price $10, that represents the work of 65 contributing and consulting editors in the field of personnel and industrial relations. Editor-in-Chief is Professor John F. Mee of Indiana University. The book is intended as an authoritative reference guide.

Twenty chapters cover topics such as the personnel program, organization planning, job analysis, personnel tests, employment, services, safety, contract negotiations, human relations and morale, training and education, public relations, industrial and government relations, personnel audit.

BREVITY—Identify by IEN - 2420 if you write the maker

METAL . . Sintered alloy material tests 50 per cent greater in density than lead

Carboloy Co.
11167 E. 8-Mile Road, Detroit 17, Mich.

Transfer of manufacture of the high-density non-porous sintered metal alloy Hevimet is announced by the company. It is now making the metal in its own plant in Detroit instead of the General Electric Cincinnati plant where it has been made since it was previously described IEN-1106-48. Primary applications are in balance weights for crankshafts, centrifugal clutches and mechanisms where high inertia and small size are desirable characteristics.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

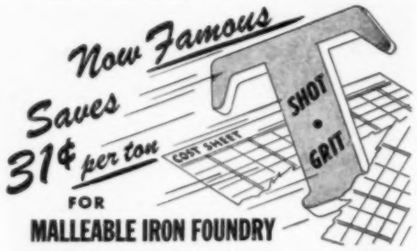
BREVITY—Identify by IEN - 2421 if you write the maker

FOR SALE

Continuous Lindberg Full Muffle Controlled Atmosphere Steel Strip or Wire Hardening and Tempering Installation, complete with wire control panels, pyrometers, and circuit breakers.

Box 300, Industrial Equipment News
461 8th Ave., New York City

BREVITY—Identify by IEN - 2422 if you write the maker



FOR MALLEABLE IRON FOUNDRY

31¢ per ton lower abrasive and maintenance costs . . . that's the actual result obtained by a well known malleable iron foundry when they used T abrasives.

Other comparative tests between T and ordinary chilled iron abrasives show these results:

- Up to 88% longer abrasive life
- Up to 83% longer blade life
- Rapid cleaning action
- 30% to 50% lower total abrasive and maintenance costs

Produced Exclusively By
NATIONAL METAL ABRASIVE COMPANY, Cleveland, Ohio
WESTERN METAL ABRASIVES COMPANY, Chicago Heights, Illinois

60th Anniversary 1890-1950

For full particulars call or write

Hickman, Williams & Co. (INCORPORATED)
CHICAGO · DETROIT · CINCINNATI · ST. LOUIS · NEW YORK
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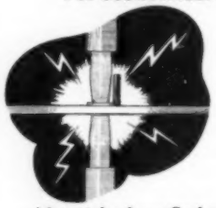
BREVITY—Identify by IEN - 2423 if you write the maker

BREVITY—Identify by IEN - 2424 if you write the maker

OHIO WELD SCREWS
For economical spot welding



Ohio SS Spotweld Screws

Thread Sizes, No. 6-32 to ½-20

Materials: Low Carbon Steel, Brass or Stainless Steel.

For dependable projection welding Ohio GW and HW Weld Screws

Thread Sizes, No. 6-32 to ½-20

Materials: Low Carbon Steel, Brass or Stainless Steel.

For list of stock sizes and samples, send to
THE OHIO NUT & BOLT COMPANY
604 FRONT ST., BEREA, OHIO

BREVITY—Identify by IEN - 2425 if you write the maker

Now—have a spic and span floor around machines!

Here's a flooring tip for the man who likes his plant to look as neat as his office.

Tuff-Tex* is a unit-laid, plastic-asbestos tile which is *highly resistant to greases and oils.*

It withstands heavy traffic, has high flexural strength, can take floor vibrations. It also resists impact from dropped objects.

Left unwaxed, Tuff-Tex provides safe, non-slip footing.

Quickly installed, easily cleaned, it is proving a "natural" for commercial kitchens, laboratories, service stations and such places as well as for factory areas.

FREE literature shows the wide range of colors. Write THE TILE-TEX DIVISION, The Flintkote Company, 1234 McKinley St., Chicago Heights, Ill.

AND FOR THE OFFICE, USE TILE-TEX*... THE QUALITY ASPHALT TILE

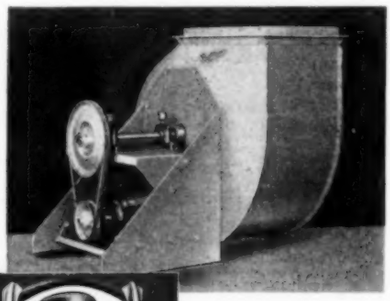
TILE-TEX FLOORING PRODUCTS

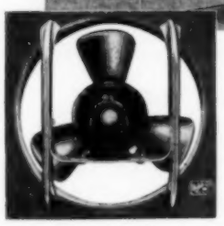
*REGISTERED TRADEMARK, THE FLINTKOTE COMPANY

BREVITY—Identify by IEN - 2426 if you write the maker

LET THESE "Buffalo" FANS SOLVE YOUR VENTILATION PROBLEM!

Here are two of the most popular fans in the complete "Buffalo" line—ideal where you need low-cost, dependable ventilation in specific areas, but perhaps did not plan on a plant-wide system. Easily installed. Practically no maintenance. And they last indefinitely.





TOP PHOTO —

"Buffalo" Belted Vent Sets are light, compact, quiet running. Non-overloading, regardless of length of duct. Capacities from 500 to 20,000 dfm. at 1/4" static. Indoor or outdoor installation. It's low-cost, flexible ventilation.

Write FOR BULLETIN 3720

LOWER PHOTO —

the popular, low-priced "Buffalo" Breezo Fan, for quick installation in outside walls for areas that need ventilation. "Put 'em in and forget 'em!" is their reputation, for there's nothing flimsy about these husky die-stamped fans.

Write FOR BULLETIN 3222-F.

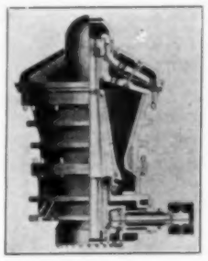
There's a "Buffalo" Fan tailor-made for your job!

BUFFALO FORGE COMPANY
496 BROADWAY BUFFALO, N. Y.
Canadian Blower & Forge Co., Ltd., Kitchener, Ont.
Branch Offices in All Principal Cities

BREVITY—Identify by IEN - 2428 if you write the maker

CRUSHING . . Gyrating cone machine for ore and rock reduction, 11 sizes

Source: ALLIS-CHALMERS MFG. CO.
909 S. 70th St., Milwaukee 14, Wis.



Superior designates new design of the company's original Superior-McCully primary crushers. The new unit is made with top and bottom shells of cast steel reinforced with a series of horizontal annular ribs. A cast-steel spider hub permits raising the forged-steel main shaft as wear progresses on the manganese steel mantle and concaves. Straight-down discharge from the bottom shelf is a feature of the new design. A dust seal, consisting of a plastic ring enclosed in a steel housing and bored to fit around the dust collar, permits vertical adjustment and gyrating action and turning of the head.

Gyrating action is obtained by an eccentric forming part of a bottom assembly that can be lowered from the machine after the bottom plate is removed. Bearings are high-lead bronze. Gear and pinion are spiral-bevel design. An external welded-steel dust-tight tank with an oil pump and motor provides pressure lubrication. A condenser-type cooler is mounted on the oil tank.

Four sizes, in standard primary design, range from 30-46 to 60-89. Four additional sizes in heavy-duty primary design range from 24-46 to 54-89. Three standard secondary units are 16, 20, and 24 or 30 inches. In the two primary groups the first number designates the receiving opening in inches. The second number is the largest diameter of the mantle in inches. The company is prepared to supply technical information covering construction, operation, product sizes, capacities.

BREVITY—Identify by IEN - 2429 if you write the maker

ELECTRONIC TUBE . . Thyratron unit for control and amplifying purposes

Source: ELECTRONS INC.
125-29 Sussex Ave., Newark 4, N. J.

Type EL CIK is a new Xenon-gas-filled grid-controlled electronic tube in which the electrode connections are brought out to metal base pins and in which the seating height is 3½ inches. The tube can be mounted in any position. It is designed for use in motor control, synchronous switching, temperature control, servo amplifiers, regulated dc. power supplies.

Anode current is average at 1 amp. dc., peak at 8 amperes. Rating is 1,250 volts peak inverse, 1,000 volts peak forward. Average arc drop is 8 volts. The filament draws 6.3 amp. at 2.5 volts with a heating time of 25 seconds. Grid shielding results in grid-anode capacitance of 1 uuf. with a grid-cathode capacitance of 10 uuf. Critical grid current is a little under 5 microamperes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2430 if you write the maker

LABOR-SAVING Moto-Bug (POWER WHEELBARROW)

- Hauls 10 cu. ft. of scrap, castings or bulk materials in big capacity hopper . . . makes man-hours 3 to 4 times more productive.
- Full power forward and reverse requires "no push, no pull" to travel, back up or to spot heavy loads.
- Driver rides on rear step (optional) . . . large steering wheel provides effortless maneuvering.
- Handy 33" width clears narrow doorways and aisles.
- Standard-make, 4 h.p. engine easily takes full load up 20% ramps and grades.

Interchangeable flatbed

moves over 1200 lbs. on sturdy 32" x 4 ft. platform . . . tilts for easy pull-away when unloading . . . has stake pockets for sideboards. Fork lift and scraper blade extend Moto-Bug's one-man economies to all kinds of material-handling jobs.

Get more facts from your Kwik-Mix distributor now . . . or send for Moto-Bug bulletin TODAY.

KWIK-MIX CO.
PORT WASHINGTON, WIS.
(Koehring Subsidiary)

BREVITY—Identify by IEN - 2431 if you write the maker

SOUTH BEND Drill Presses

14" Economy Model Drill Press

14" Precision Drill Press

For Efficient Production

South Bend Drill Presses offer many advantages for production machining. They are ruggedly built to give long, dependable service on heavy work. Yet, their accuracy and responsive handling make them ideal for light, fast work. All are built with typical South Bend quality and skill . . . Economy and Precision Bench Models (as illustrated) also, floor types and multiple spindle production units. *Write today for catalog.*

SOUTH BEND LATHE
South Bend 22, Indiana • Building Better Tools Since 1906

BREVITY—Identify by IEN - 2432 if you write the maker

Sundstrand *Straight-Line Action* Air Sander saves time...gives more uniform finish!

Here's the proven, *better* way to sand filler on castings. New Sundstrand Single Pad Air Sander gives a fast cut . . . quickly, evenly removes high spots . . . and because of its compact size and *straight-line action* gets into close quarters, up next to edges and moldings. Results in exceptionally fine finish . . . ideal for many other sanding operations on wood, metal, or plastics.

SUNDSTRAND AIR SANDERS
SUNDSTRAND MACHINE TOOL CO.
PNEUMATIC DIVISION, ROCKFORD, ILLINOIS

BREVITY—Identify by IEN - 2433 if you write the maker

The Synthane COMBINATION Gives the Right MATERIAL Answers

If your requirements are strict and your present material in any way unsatisfactory, Synthane may be the answer to your problem. Synthane has an unusual *combination* of mechanical, electrical and chemical properties which have led to its use in many applications in almost every industry.

Light, hard, strong and dense, Synthane *is* easily machined. Resistant to corrosion and abrasion, it rates high in electrical properties such as high dielectric strength, low power factor and low dielectric constant.

Find out more about Synthane and its possible advantages to you. Clip and mail the handy coupon for your Synthane catalog.

TECHNICAL PLASTICS
SHEETS • RODS • TUBES
FABRICATED PARTS
SYNTHANE
MOLDED-LAMINATED
MOLDED-MACERATED

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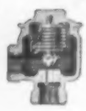
South River Road, Oaks, Pa.
Please send me a copy of the complete Synthane catalog.
Name _____
Firm _____
Address _____
City _____ State _____

BREVITY—Identify by IEN - 2434 if you write the maker

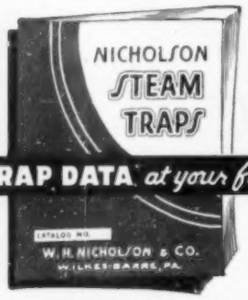
Send for Nicholson

TRAP CATALOG 250



A Standard Reference on Traps for All Applications

Newly revised, this 32-page reference describes traps for all mediums and pressures: thermostatic and metal expansion for pressures to 225 lbs.; weight and piston - operated for heavy duty. Complete with installation diagrams and formulae for determining proper size trap.



TRAP DATA at your fingertips

W. H. NICHOLSON & CO. 159 OREGON STREET WILKES-BARRE, PA.

Sales and Engineering Offices in 53 Principal Cities

BREVITY—Identify by IEN - 2435 if you write the maker

10-DAY DELIVERY!

SIMPLEST... MOST COMPACT

O-M AIR HYDRAULIC WATER CYLINDERS

Speed production, cut costs and save space with Ortman-Miller cylinders. Full range of sizes (1½" to 8" bores) now *available for early delivery*. All machined steel and bearing bronze. Interchangeable parts and mounting Brackets. Write today!

FREE TEMPLATES

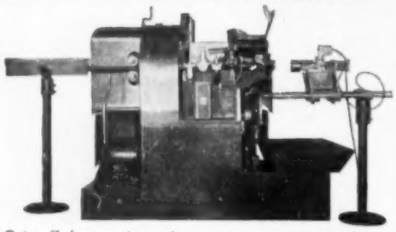
Shows the full line in ½ scale. Request your free complete set now.

ORTMAN-MILLER MACHINE CO., INC.

1208 150th Street, Hammond, Indiana

BREVITY—Identify by IEN - 2436 if you write the maker

MODERN CUTTING-OFF MACHINE



Cuts off longer pieces than regular automatic machine—*any length you want*. FAST cutting and chamfering of tubing, pipe, shafting. Check the following figures:

½" Tubing — Cuts and Chamfers both outside edges of ½" .035 wall tubing, 5" lengths, every 2.5 seconds.

1¼" Cold Rolled — Cuts and Chamfers both ends, 20" long, at rate of 1 every 20 seconds.

1" Tubing — Cuts and Chamfers both outside edges, pieces 3" long. One every 3 seconds.

4" THREADED STUDS

Modern Automatic Cutting - Off Machines available in 2 sizes, handling work up to 3" O.D.

WRITE for CATALOG

Cut and chamfered at one time—in 8 seconds—from 10 ft. length of stock already threaded 1¾" U. S. Standard. Clean cut. Clean chamfer. Nuts start easily, with no extra finishing required.

MODERN MACHINE TOOL CO.

JACKSON MICHIGAN

NEWS NOTES—Continued

"How to sell to the Government"

BREVITY—Identify by IEN - 2437 if you write the maker

PLANT SAFETY . . Six new training films to show supervisors and foremen how to conduct a meeting

National Safety Council
423-27 N. Michigan Ave., Chicago 11, Ill.

"Speaking of Safety" titles new series of six 35-mm. sound slide films that are accompanied by 16-in. records for 33⅓-rpm. operation. They are intended to show supervisors and foremen how to address and conduct meetings. Showing time for each film is about 13 minutes. List price per set to Council members is $100. Single films list at $18. List prices to non-members is $200 and $36.

Titles include "The Power of Speech," an introductory film; "Butterflies in Your Stomach," on how to overcome stage fright; "The Key to Good Speaking," "On Your Feet," "Now You're Talking," and "Ring the Bell," the last one on how to illustrate a point by a number of means.

BREVITY—Identify by IEN - 2438 if you write the maker

PLANT SITES . . House publication to inform you of developments in the Middle South

Middle South Area Office
209-12 International Trade Mart, New Orleans 12, La.

"Middle South News" in its current issue carries a feature article on effects of climate on structural design. The publication presents news on developments of industry interest in the states of Arkansas, Louisiana and Mississippi. Your name will be added to the mailing list upon request.

BREVITY—Identify by IEN - 2439 if you write the maker

PROCUREMENT . . How to sell to the Government is subject of new 16-page information bulletin

General Services Administration
18th & 19th Sts., Washington 9, D. C.

Non-technical description of how the Government buys and how you can locate the appropriate buying offices for your products is given in new bulletin, "Selling to the Government". Who buys, bid lists, GSA regional offices, purchasing programs, specifications, how to get paid, are typical topics.

BREVITY—Identify by IEN - 2440 if you write the maker

PROTECTING . . Book on accident prevention describes methods, equipment, organization, education

McGraw-Hill Book Co.
330 W. 42nd St., New York 18, N. Y.

Third Edition of "Industrial Accident Prevention" brings the book up to date on application of its basic principles to modern equipment and processes. The book has 486 pages, lists at $4. It stresses principles, facts and methods.

Basic philosophy of accident prevention is detailed in an initial 60-page chapter. Other chapters describe safety organization, creating and maintaining interest, facts and fact finding, accident analysis, selection of remedy, corrective action, equipment guarding, protective equipment, illumination and vision, occupational disease, education, accident statistics.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2441 if you write the maker

A press brake equipped with Wittek No. 6-L Automatic Roll Feed

You Can't Beat WITTEK

Wittek Roll Feeds are made in standard models to meet every requirement in the automatic feeding of strip stock to punch presses or press brakes. The distinguishing feature is their simple and economical method of operation which does away with complicated parts thereby assuring *speed* and *accuracy* in the feeding of various kinds and thicknesses of material.

Wittek Adjustable Reel Stands are designed as companion units to Wittek Automatic Roll Feeds and are available in seven different models to handle *ALL* types of coiled strip stock and wire being fed to punch presses or similar production machinery.

Write for complete descriptive literature.

WITTEK Manufacturing Co.
4336 West 24th Place
Chicago 23, Ill.

Automatic ROLL FEEDS AND REEL STANDS

BREVITY—Identify by IEN - 2442 if you write the maker

Bendix-Friez PRESENTS THE Illuminometer

INDUSTRY'S NEW TOOL FOR MEASURING DAYLIGHT ILLUMINATION

The Bendix-Friez Illuminometer is ideal as an aid to correct light-load prognostication through correlation with weather data and other known system factors. Based on U.S. Weather Bureau designs, this new instrument provides continuous recordings of daylight intensity in hundreds of foot-candles. An internal filter neutralizes heat ray effects and means are provided within the unit for calibrating the sensing element against U. S. Government standards. The Illuminometer is built and backed by Bendix-Friez, world's largest manufacturer of fine weather instruments.

Write: FRIEZ INSTRUMENT DIVISION of
1352 Taylor Avenue • Baltimore, Maryland

Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.

BREVITY—Identify by IEN - 2443 if you write the maker

Mullenbach Industrial Resistors

QUICK DELIVERY!

Special alloy resistance wire triply insulated from frame, retains constant resistance, regardless of temperature, resists corrosion at high heat. Silver brazed terminal connections. One-piece cadmium-plated steel frame operates at ground potential.

Available in single units from ¼ ohm at 60 amps. to 20 ohms at 5 amps. Also supplied in open and enclosed banks, series or parallel circuits for various load requirements. 500 Volt AC or DC rating. Underwriters Lab. Approval.

Free folder supplies electrical and mechanical specifications and prices. Write for copy.

Open bank

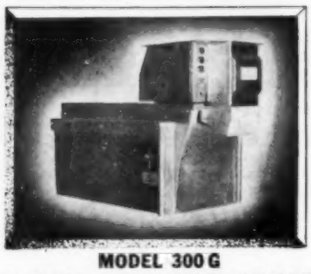
Enclosed bank

Electrical

MULLENBACH COMPANY
2300 EAST 27th STREET LOS ANGELES 58, CALIFORNIA

BREVITY—Identify by IEN - 2444 if you write the maker

"portrait of a NEW packaging manager"



MODEL 300 G

THAYER FILLING SCALE

- Fills 6 to 10 units per minute
- Accurate to within 1/10th pound
- Capacity of 25 to 225 pound units
- Granular, flake or powdered materials
- Fills bags, drums and barrels
- Stainless steel feeder . . . self cleaning
- Automatic bag-holder and release
- Automatic Checkweigher
- THAYER leverage system . . . no knife-edge pivots.

THAYER SCALE and ENGINEERING CORP.
ROCKLAND, MASSACHUSETTS

BREVITY—Identify by IEN - 2445 if you write the maker

BREVITY—Identify by IEN - 2446 if you write the maker

Now—simplify tough PULLING jobs!

(Save the tool cost in one operation!)

New—7 Complete Units • 10 to 100 Tons Capacity

SIMPLEX Re-Mo-Trol Hydraulic "Center-Hole" PULLERS

PUMPS AND REMOTE CONTROLLED RAMS

It's the "Center-Hole" That Does the Job*

An exclusive Re-Mo-Trol improvement! Ram plunger is tubular. A pull rod or screw inserted through the ram and secured to object being pulled is drawn in a straight line *directly through* the Ram—simplifies rigging and provides its own back-up.

Removing sleeve with Re-Mo-Trol, using supporting cage, pulling screw and back-up washer. Direct pull quickly draws sleeve from cylinder.

* *On Rams of 30-tons or greater capacity.*

DIRECT LINE PULL
No torque or side thrust. Requires up to 75% less effort—lets you do bigger, harder pulling jobs easier.

FEWER FIXTURES NEEDED
Simplifies rigging. The Re-Mo-Trol Ram acts as its own back-up and is self-supporting.

SAFER, HANDIER POWER
Operator is always at safe distance. Re-Mo-Trol can be used where lack of space or difficult positioning prevents use of self-contained jacks or pullers.

GREATER UTILITY
Light in weight, easily portable. Operates in any direction—up, down or sideways!

Write for Bulletin: Hydraulic 51

Simplex LEVER • SCREW • HYDRAULIC Jacks

TEMPLETON, KENLY & CO. • 1012 S. Central Ave., Chicago 44, Ill.

BREVITY—Identify by IEN - 2448 if you write the maker

FEEDING . . Belt type machine delivers dry materials by weight

Source: BUILDERS-PROVIDENCE INC.
P. O. Box 1342, Providence 1, R. I.

Dry powders or granular material are handled in an adjustable range from a few cubic inches to a maximum of 3 cfm. by this new Model 50-8 Gravimeteric feeder. The machine is driven by a ¼-hp. motor for single-phase, 3-phase or synchronous operation on specified voltage. Feed rate is adjustable over a 100 to 1 range. Overall dimensions are approximately 42 by 21 by 16 inches. Installation can be made on a cabinet base, mixing chamber, a table, or by suspension from a chemical hopper.

The dry material enters the feeder at the top by connection to an extension hopper, a supply chute or a circulating installation. The material passes to the feeding mechanism where it is fed to the scale-supported moving conveyor belt for delivery to the feeder outlet. Rate of speed is determined by the weight of the material on the belt and by the belt speed. Normally constant weight is predetermined and is seldom changed.

Delivery to the belt is controlled by setting a slide gate and is regulated by the action of a rubber wedge attached to the scale beam. This wedge controls amplitude of vibration imparted to the feed tray depending on the vertical position of the beam and therefore of the wedge itself. Changes in rate of feed are made by adjusting the variable speed transmission by which the belt is driven.

The housing is made of stainless steel in welded assembly. The mechanism is enclosed by lift-off dust-tight doors on three sides. The one-piece conveyor belt is made of reinforced molded neoprene and is driven by sprockets. The bearings are Oilite or ball design.

Bulletin 35-G5, 8 pages, presents illustrated detail information on the machine, its operation and control, and on various items of accessory equipment.

BREVITY—Identify by IEN - 2449 if you write the maker

DRILLING . . Carbide tipped tool for hardened steel, ⅛ to 5/16 inch

Source: SUPER TOOL CO.
21652 Hoover Road, Detroit 13, Mich.

New design of the company's carbide tool to drill in hardened steel, previously described IEN-35-48, employs a long tip of solid carbide which assists in keeping heat developed by cutting away from the braze connection to the shank. This prevents the tip from loosening in the shank, particularly in the smaller diameters. Designation is Super-Hard.

Sizes range from ⅛ to 7/16 in. in stock with others available to specification. Drills measuring ⅜ to ⅝ in. are also carried in stock in the company's previously-developed carbide-tipped hexagon-shank design for similar application.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2450 if you write the maker

From the seven basic Clair designs, a custom-made machine can be developed to give greatest efficiency in your surface finishing operation. With totally enclosed, abrasion-proof hydraulic circuits and adjustable controls, Clair Machines provide the precision and trouble-free operation necessary for efficient surface finishing on a production basis.

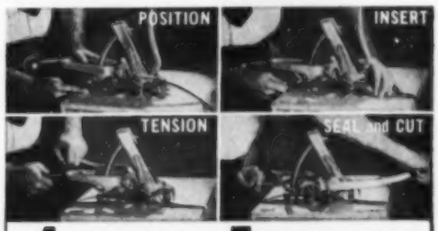
Write for technical data

CLAIR MANUFACTURING CO., INC.

Specialized Machine Equipment For Glazing and Polishing Operations

OLEAN, N. Y.

BREVITY—Identify by IEN - 2451 if you write the maker



4 STEPS . . . 5 SECONDS

with the Improved

STANLEY ACE STRAPPING TOOL

● Puts strapping on a production basis! Even a beginner can make time with it. Magazine holds 100 seals—is easily loaded and seals in any position. The "Ace" comes in three sizes to handle ⅝", ½" and ⅜" strapping. Put this production tool to work for you. Write for information or ask for demonstration. The Stanley Works, Steel Strapping Division, 143 Lake St., New Britain, Conn.

STEEL STRAPPING AND CAR BANDING SYSTEMS

STANLEY

Reg. U.S. Pat. Off.

HARDWARE • TOOLS • ELECTRIC TOOLS
STEEL STRAPPING • STEEL

BREVITY—Identify by IEN - 2452 if you write the maker

Rapistan Cold-Forged caster raceways are shaped by high-pressure coining, like silver dollars, then case hardened. They wear longer, cost less. Available in 3 series—serving a variety of applications . . . in wheel sizes ranging from 3¼" to 8".

Write today for new free catalog of Rapistan Casters and Trucks.

Rapistan CASTERS

THE RAPIDS-STANDARD COMPANY, INC.
522 Rapistan Building Grand Rapids, Mich.

BREVITY—Identify by IEN - 2453 if you write the maker

Now every shop can have the advantages of BAND SAWING

The New WELLS Model 49 A METAL CUTTING BAND SAW

The new Wells Model 49A fits the smallest shop's budget, yet it does a man-sized job in any plant. From its welded steel frame to its tubular steel base, the Wells Model 49A is a rugged shop tool that will give long, dependable service. Its portability is unequalled. Capacity: Rectangular—3½" x 6½", Rounds—3½" diameter. Easy to operate without special training, the Model 49A can be used by anyone in the shop. Automatic shut-off at the end of the cut eliminates the need for the operator to stand by. Write for complete details.

Products by Wells are Practical

Wells

METAL CUTTING BAND SAWS

WELLS MANUFACTURING CORPORATION
1111 MADISON ST., THREE RIVERS, MICH.

BREVITY—Identify by IEN - 2454 if you write the maker

- High wear resistance
- Holds nozzle orifice dimensions
- Retains original velocity
- Resists cut-outs
- Saves compressed air
- Restricts pattern—keeps it concentrated on the work

Guaranteed **300 HOURS** when cleaning with sand or most other common abrasives. Usually lasts longer!

Made in standard screw and flange types.

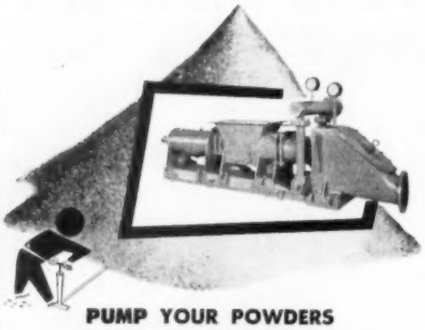
Special types and sizes built to order.

Write for complete details.

*BORIUM is the Stoody trade-name for its pure, extremely wear-resistant tungsten carbide—one of the hardest commercial metals yet developed by man!

STOODY COMPANY • 11930 East Slauson Avenue, Whittier, California

BREVITY—Identify by IEN - 2455 if you write the maker



PUMP YOUR POWDERS with a FULLER-KINYON SYSTEM!

Powders that can be aerated flow like water—anywhere in a plant—when they're pumped by Fuller-Kinyon. Such dry, pulverized materials can be automatically distributed to any desired number of bins in sequence. No dust nuisance . . . no waste . . . safe . . . sanitary . . . low power . . . low maintenance. If you have a bulk dry material handling operation, it will pay you to ask Fuller about it. Write for further information.

P-122

FULLER COMPANY, Catasauqua, Pennsylvania
Chicago 3—120 So. LaSalle St.
San Francisco 4—420 Chancery Bldg.

7256

fuller DRY MATERIAL CONVEYING SYSTEMS AND COOLERS • COMPRESSORS AND VACUUM PUMPS • FEEDERS AND ASSOCIATED EQUIPMENT

BREVITY—Identify by IEN - 2456 if you write the maker

LET Clarke SHOW YOU . . .

A Better Way of Floor Care!

Only actual use can demonstrate the overall superiority of Clarke maintenance machines. Widespread use in churches, schools, hotels, hospitals and industry is only partial assurance of guaranteed performance. We want to show you — on your own floors — why Clarke machines have long been preferred for all phases of floor care.

Sales and Service Branches in All Principal Cities

CLARKE SANDING MACHINE COMPANY
283 Clay Street, Muskegon, Mich.

Please rush me hints on easier and faster floor care and more information on the following machines:

Clarke Floor Maintainers ☐
Clarke Wet and Dry Vacuum Cleaner ☐
Please arrange a free demonstration ☐

NAME
ADDRESS
CITY ZONE STATE

HERE IS JUST PART OF THE CLARKE LINE:

CLARKE FLOOR MAINTAINERS
Four sizes for any application. Scrub, wax, polish, steel wool, sand, and shampoo. Improved safety switch. "Self-lifting" wheels.

CLARKE WET and DRY VACUUM CLEANER
Picks up water, dirt. Quick dump valve, no lifting. Powerful suction . . . neoprene hose.

NEWS NOTES—Continued

"Signs and posters for fork lift trucks"

BREVITY—Identify by IEN - 2457 if you write the maker

PROTECTING . . Safety in the laboratory described in booklet along with protective equipment

Fisher Scientific Co.
715-19 Forbes St., Pittsburgh 19, Pa.

Four sections in revised 40-page edition of "Manual of Laboratory Safety" cover accident prevention, first aid, fire prevention, safety clothing and equipment. Specific instructions are grouped under general rules. Inside the front cover is a set of ten commandments for laboratory safety.

BREVITY—Identify by IEN - 2458 if you write the maker

TECHNICAL WRITING . . How to go about it from the viewpoint of writing for a business paper

Wm. C. Brown Co.
725 Bank & Insurance Bldg., Dubuque, Iowa

"Writing for the Business Press" titles new 398-page book, list price $4, which describes business papers and the careers they offer to writers. Its first six chapters constitute a review of what business papers are, who reads them, what they do, personal qualities and training required for editorial personnel. The other 25 chapters are written by business-paper editors in a number of fields. They tell you how to write for business papers, how to submit articles, essentials of technical writing, opportunities that exist.

BREVITY—Identify by IEN - 2459 if you write the maker

TESTING . . How the company's instruments are used with equipment by other makers for industrial research

Brown Instruments Division
4456 Wayne Ave., Philadelphia 44, Pa.

Modern instruments for industrial research and analysis is subject of new 84-page Bulletin 15-14. Applications of the company's ElectroniK recording potentiometer are shown by schematic operating diagrams and detail descriptions in combination with equipment by other manufacturers. They include spectrometers, polarographs, titrators, vacuum gages, pressure and force transducers. The General Electric mass spectrometer is an example.

One section covers the company's own precision laboratory measuring instruments in similar manner. It applies to an electrometer, radiation pyrometer, servo equipment.

BREVITY—Identify by IEN - 2460 if you write the maker

TRUCKS . . Instructions and posters in new safety kit for power lift trucks

Towmotor Corp.
1224-28 E. 152nd St., Cleveland 10, Ohio

Four signs, four posters and an instruction booklet are included in new Safety Kit available on request to plant executives and safety directors. The signs measure 22 by 14 in., are on yellow cardboard. They are for use as interior caution markers. The posters are 11 by 14 in. for bulletin boards. The booklet, previously described IEN-788-49, tells how to run a fork truck.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2461 if you write the maker

YOUR EASIEST WAY TO LOW-COST OPERATION

When centrifugal pumps are proportioned in size to their duties, costs are kept to a minimum. Eastern Industrial Pumps do an efficient job. Weight, space, power, and costs are reduced. Heavy-duty application with trouble-free performance is yours with minimum operating costs.

FREE Eastern Centrifugal Pump Catalog 100. 12-page, 2-color catalog offers engineering data, charts and illustrations, packed with helpful suggestions.

Write Dept. AJ today.

Eastern INDUSTRIES, INC.
296 ELM ST., NEW HAVEN, CONN.

BREVITY—Identify by IEN - 2462 if you write the maker

From Air Conditioning To Atomic Research

THESE SMALL SWITCHES ARE DOING A BIG JOB

Series 240 Rotary Switches

. . . now available in over 30 circuit variations for heater, motor and low-voltage A.C. electronic applications

Brand new only a few months ago, today in dozens of products, both civilian and defense, Series 240 Switches are proving the value of their exclusive combination of features:

- *Compactness* — unmatched by any comparable switch: base only 1½" high, 1¼" wide, 1" deep. Available in single hole mounting and bezel equipped models. Latter snaps into mounting hole for fast assembly with spring clips holding it firm.
- *Heat Resistance* — completely efficient operation with ambient temperatures up to 400° F.
- *Entirely Enclosed* — for safety, and protection of working parts.
- *High Overload Capacity* — ratings are conservative: 7½ A. 240 V; 15 A. 120 V; 25 A. 120-240 V; 1H.P. 120 V; 2 H.P., 240 V. A.C. only. Underwriters' Laboratories Approved.
- *Peak Performance and Long Service Life* — thanks to ingeniously simple design, rugged construction, heavy silver contacts and long recognized "Diamond H" slow-break principle.

Write today for complete details on how Series 240 Switches will meet your needs.

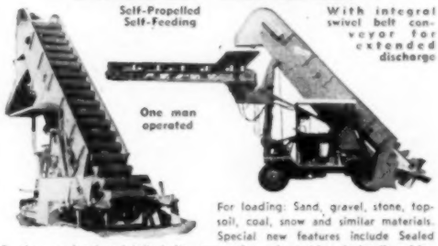
THE HART MANUFACTURING COMPANY
203 BARTHOLOMEW AVENUE, HARTFORD, CONNECTICUT

BREVITY—Identify by IEN - 2463 if you write the maker

HAISS FOR 58 YEARS BUILDERS OF HIGH QUALITY

Material Handling Equipment

BUCKET LOADERS



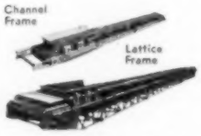
For loading: Sand, gravel, stone, topsoil, coal, snow and similar materials. Special new features include Sealed Bearings on head and tail shafts, two or four wheel drive, hydraulic raising and lowering, manganese or roller chain.

CONVEYORS

TROUGH OR FLAT BELT CONVEYORS
For loading sand, gravel, coal and similar bulk materials from cars or piles to trucks.

PACKAGE CONVEYORS
For handling bags, boxes, crates, cartons, etc. Portable or stationary mounting. All types—All sizes.

UNDERCAR UNLOADERS
Heavy duty for handling crushed stone, gravel, sand, coal and similar materials. Capacity up to 5 tons per minute.



SECTIONAL CONVEYORS
Channel Frame or Lattice Frame construction made in easily assembled individual sections for permanent or portable installation. All sizes and capacities available. Trough belt—for handling crushed stone, sand, gravel, coal and similar materials. Flat belt type—for handling bags, boxes, packaged materials.

BUCKETS

EXCAVATING REHANDLING
Heavy duty buckets for digging and trenching, dredging and rehandling. Capacities ¼ to 3 yards. Special narrow buckets available for trenching. Ask for bulletin H-850.

Capable Representatives in All Principal Cities

GEORGE HAISS MFG. CO., INC. division of PETTIBONE MULLIKEN CORP.
141st to 144th St. on Park Ave.
NEW YORK 51, N. Y.
Phone Mott Haven 5-2200

4700 W. Division Street
CHICAGO 51, ILL.
Phone Saulsing 2-9300

HAISS NEW YORK · UNIVERSAL CHICAGO CEDAR RAPIDS

BREVITY—Identify by IEN - 2465 if you write the maker

For Access Panel and Door Assemblies

QUICK-LOCK speeds up mounting and demounting detachable panels. A 90° turn locks and unlocks it in a jiffy. Flexible mounting and tapered stud makes it ideal for assembling curved sheets and insures a tight fit when locked. Stud is self-ejecting when unlocked. Minimum deflection is assured—only initial loads are carried by the helical spring. Solid supports take up increased loads.

Call in a Simmons Engineer and compare QUICK-LOCK's economy with your present fastening method.

SIMMONS FASTENERS

SIMMONS FASTENER CORP. • 1758 No. Broadway, Albany, N. Y.

BREVITY—Identify by IEN - 2466 if you write the maker

A *BETTER* ENGRAVER
At *LOWER* COST
The 2 & 3-Dimensional

MICO

Fills the long-felt need for a portable, inexpensive and dependably accurate machine for making small dies, molds, templates, etc. Extremely simple to operate.

Note These Superior Features
- Engraves 2 or 3 dimensions.
- Pantograph permits 4 reduction ratios.
- Micrometric depth control graduated in thousandths of an inch.
- Entire spindle assembly removable to facilitate cutter grinding.
- Rugged cast iron construction with exclusive adjustments for insuring quick, accurate writing.

Send for complete specifications and attractive price list.

MICO INSTRUMENT COMPANY
81 TROWBRIDGE STREET, CAMBRIDGE, MASS.

BREVITY—Identify by IEN - 2467 if you write the maker

WARRICK

SIMPLE
RELIABLE
ACCURATE

FLOATLESS

LIQUID LEVEL CONTROLS

ELECTRODE TYPE

HIGH & LOW LEVEL ALARMS
HIGH & LOW LEVEL CUTOFFS
MULTI-LEVEL SIGNALS
PUMP CONTROLS
DUPLEX & MULTIPLE PUMP ALTERNATORS
LIQUID METERING
CONDENSATE CONTAMINATION DETECTION
SPECIAL CONTROLS & PANELS

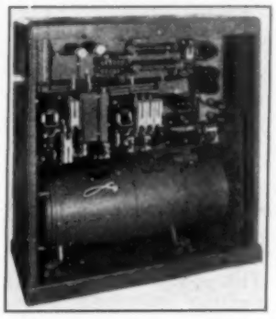
WRITE FOR CATALOGUE

CHARLES F. WARRICK CO.,
18254 HAMILTON AV., DETROIT 3, MICH.

BREVITY—Identify by IEN - 2468 if you write the maker

DRIVE . . Variable speed dc. motor and control for three-phase ac. input

Source: LOUIS ALLIS CO.
425-29 E. Steward St., Milwaukee 7, Wis.



Select-A-Spede trade names new assembly of open drip-proof motor, operator's control station and a cabinet-enclosed power unit for connection to a three-phase ac. line. The speed can be preset at the control station before starting or adjusted while running at any point from one-eighth of base speed to full base speed. A special control circuit and motor design is available for speed adjustment by field control to a maximum of five times the base speed. The equipment is available in ratings to 30 horsepower.

The power unit consists of a motor-generator set to convert ac. input to dc. power supply, a control panel to assemble the necessary control functions and dry-type selenium rectifiers to supply dc. excitation for the generator and driving-motor field. The power cabinet itself is equipped with louvers to admit air for internal ventilation.

Bulletin 1100-B, 8 pages, presents illustrations and circuit diagrams with internal views, parts identification and technical description of the new magnetic amplifier control for variable-speed drive featured in the new assembly.

BREVITY—Identify by IEN - 2469 if you write the maker

CLEANING . . Rotary brush machine, explosion proof for hazardous locations

Source: HOLT MFG. CO.
649-53 20th St., Oakland 12, Calif.

Model EPC Commander is new explosion-proof assembly of the company's all-purpose rotary brush machine for floor scrubbing, polishing, waxing. The machine also can be employed with a grinding disc to resurface uneven or pitted floors. It is made in four sizes with brush spread from 14 to 20 in. in diameter. Operating speed is 180 to 170 rpm. The motor rates ½ to 1-hp. and is supplied for operation on 110/220-volt ac. or dc. List price with a 50-ft. extension cord and switch is $350 to $450.

The design is intended for use in powder factories, atomic research plants, oil refineries, where positive safeguards are required against combustion or explosion. The assembly is vapor-proof, spark-proof and shock-proof. Flames or sparks cannot escape. External moving parts are built to eliminate static. Metal enclosures prevent the possibility of explosion. Electrical fittings bear Underwriter's Approval Seal.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

BREVITY—Identify by IEN - 2470 if you write the maker

HALF

Red film

Half of this message has to do with the drawing of steel, stainless steel, aluminum, brass with FLUID-FILM U-19 . . . it is non-corrosive to dies and metals . . . applied with rush, roll, dip, spray,—weld through it. FLUID-FILM, a non-pigmented, semi-emulsion compound performs the toughest job economically—a little of it goes a long way . . .

the other HALF

metal cleaner SC-9

Is concerned with the cleaning of stampings drawn with FLUID-FILM in pressure washing equipment with Northwest Metal Cleaner SC-9. It has been on the market for years and is thoroughly plant proven for all washing machine use regardless of application. SC-9 is still one of the lowest priced cleaners in spite of the alkali price increase . . .

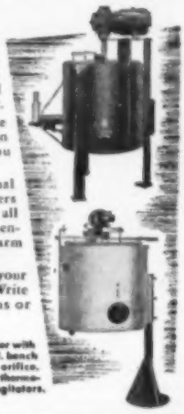
the Whole . . .

NORTHWEST CHEMICAL CO.
2310 ROSELAWN · DETROIT 4, MICH.

'32

BREVITY—Identify by IEN - 2471 if you write the maker

SPEED UP COMPOUND MELTING with STA-WARM HEATING TANKS



● Name your compound melting requirement! Sta-Warm will suggest *exactly* the tank or pot in their wide and varied line to produce the heated compound you need at the rate you need it.

Or, their engineers will analyze your special problem and design the unit to do your job as you want it done.

Heating and dispensing unusual compounds and tailoring melters to unusual production set-ups is all in the day's work for Sta-Warm engineers. Put specialized Sta-Warm "know-how" to work for you.

The *right* equipment can break your compound melting bottleneck. Write for Sta-Warm recommendations or bulletins today.

Shown at right (above) is 25 gal. melter with molasses gate valve. Below it is 5 gal. bench type dispenser with needle valve orifice. Both models equipped with variable thermostat controls and power driven agitators.

Sta-Warm ELECTRIC CO.
560 N. CHESTNUT ST., RAVENNA, OHIO

BREVITY—Identify by IEN - 2472 if you write the maker

HAYNES STELLITE

Alloy Bushings Resist Severe Abrasion

These HAYNES STELLITE alloy No. 6 bushings for ship turbine control mechanism effectively resist the severe abrasive wear to which they are subjected. HAYNES STELLITE alloy has a low co-efficient of friction and is practically impervious to atmospheric corrosion. These properties make the alloy particularly useful for applications of this type.

Many types of specially designed bushings and half bushings, as well as other special machinery parts, are available in any grade of HAYNES STELLITE alloy. Write for more complete information.

HAYNES STELLITE DIVISION
Union Carbide and Carbon Corporation
UCC
General Office and Works, Kokomo, Ind.

"Haynes Stellite" is a registered trade-mark of Union Carbide and Carbon Corporation.

BREVITY—Identify by IEN - 2473 if you write the maker

you save 50% in TANK HEATING and COOLING with PLATECOIL

★ You SAVE 50% in tank SPACE
★ You SAVE up to 50% in initial COST
★ You have 50% LESS WEIGHT to handle
★ You SAVE 50% in maintenance LABOR as plates are changed from outside the tank without dumping solution

. . . besides all these you get faster heating or cooling. Take advantage of the engineering assistance offered by Kold-Hold to help you with your heat transfer problems.

Send for complete technical manual and descriptive Bulletin No. P56.

PLATECOIL
KOLD-HOLD MFG. CO.
LANSING 9, MICHIGAN

BREVITY—Identify by IEN - 2474 If you write the maker

$10,440 saved per yr. by 2 DUMORE DRILL HEADS

This $10,000 saving is "gravy" say tool engineers of F. C. Russell Company, makers of Thermoseal combination windows. "The saving in drills alone in the first 15 months use of these two Dumore units repays their entire cost!"

If your plant uses small drills (No. 80-1/8") you should investigate these amazing economies. Write for bulletin and report on production savings.

Write today for free CATALOG!

The DUMORE Company
Dept. C-47, RACINE, WISCONSIN
Repair Address: 13 E. 40th St., New York, N.Y., U.S.A.

BREVITY—Identify by IEN - 2475 If you write the maker

LESS CLEANING TIME

MORE PRODUCTION TIME

WITH A Doyle VAC-IT

Subtract from cleaning expenses and add to production profits the time you can save by taking advantage of the powerful cleaning capacity of the Doyle Vac-It. Production machinery is thoroughly cleaned and freed of all clogging dust, dirt and grime in a fraction of the time ordinary cleaning methods take. Metal chips, shavings, grease and liquids are quickly removed from working surfaces leaving them clean and dry. So efficiently does the Doyle Vac-It perform that it is not necessary to stop production or shut down machinery during cleaning.

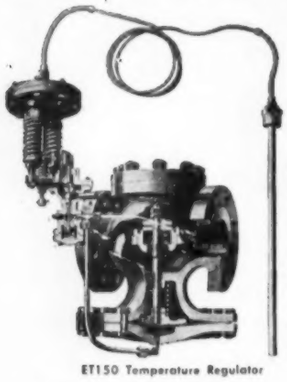
Write today for informative Doyle Bulletins.
See how you can cut cleaning time and costs throughout your entire plant.

Doyle VACUUM CLEANER CO.

2235 Stevens St., S. W. Grand Rapids 7, Michigan

BREVITY—Identify by IEN - 2476 If you write the maker

LOW COST Temperature Control



ET150 Temperature Regulator

Tops in performance for both storage and instantaneous heaters, this pilot-operated Spence regulator offers these important advantages:

SECO Metal Seats and Discs — 20 years experience has failed to produce a single case where SECO Metal has been cut by steam.

Packless Construction — minimizes friction . . . eliminates much time-consuming maintenance.

Large Metal Diaphragm—under usual conditions never requires replacement.

New bulletin gives complete data on the entire line of Spence regulators. They are made in sizes from 1/4" to 12" for service with air, steam, water, oil or gas. Write for your free copy of Bulletin 500 today.

SE-106

Spence
SPENCE ENGINEERING COMPANY, INC.
WALDEN, NEW YORK

NEWS NOTES—Continued

"Slide selector for bending stainless tubes"

BREVITY—Identify by IEN - 2477 If you write the maker

TUBES . . Cardboard slide selector on bending radii for stainless tube and pipe

Carpenter Steel Co.
131-35 Springfield Road, Union, N. J.

Minimum radii recommended for bending and coiling stainless-steel tube and pipe show at windows in new "Tube Bending Slide Chart". Size is about 4 by 9 inches. Range is 3/8 to 5-in. od. tube, 22 to 11 gage, and 1/8 to 4-in. pipe. Tables on the chart are for pipe sizes, dimensions, burst pressures.

BREVITY—Identify by IEN - 2478 If you write the maker

TUBES . . Technical article reprint on mechanical steel tubing cold formed by compression

Tube Reducing Corp.
50 Main Ave., Wallington, N. J.

Description of the company's Rockrite process of cold-forming steel tubes is presented at the start of new 4-page bulletin, "Compression-Formed Tubing." Author is Mr. L. A. Karg. Examples are given of available types, shapes and sizes. One illustration shows range of inside contours possible.

BREVITY—Identify by IEN - 2479 If you write the maker

WELDING . . Color sound film describes company's Aircomatic arc process

Air Reduction Sales Co.
1656 Lincoln Bldg., New York 17, N. Y.

"The Tool for the Job" titles a new 16-mm. Kodachrome sound motion picture on the Aircomatic process for arc-welding aluminum, stainless steel, bronze, Monel Metal. It shows actual deposition of weld metal, arc details, applications of the process. Showing time is 21 minutes.

BREVITY—Identify by IEN - 2480 If you write the maker

WELDING . . With bronze electrodes the subject of booklet on procedures and techniques

Ampco Metal, Inc.
1743-47 S. 38th St., Milwaukee 15, Wis.

Detail instructions, illustrated by photographs and drawings, are presented on bronze-electrode welding methods in new 24-page Bulletin W-17. Included are preparation, electrode handling, inert-gas metal-arc technique, procedures for a number of metals, application data on the electrodes.

BREVITY—Identify by IEN - 2481 If you write the maker

WELDING . . Handbook on arc welding has 1,200 pages, 1,500 illustrations, lists at $2

Lincoln Electric Co.
12030 Coit Road, Cleveland 8, Ohio

Ninth Edition of the company's "Procedure Handbook of Arc Welding Design and Practice" includes a new chapter on weldability, revised information on structural design and a new chapter on welded design data. It pictures and describes methods, equipment, materials, inspection, uses.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

BREVITY—Identify by IEN - 2482 If you write the maker

600 CU. FT. DIESEL ENGINE DRIVEN COMPRESSOR

WRITE FOR BULLETIN 5025

SCHRAMM INC.
The Compressor People
WEST CHESTER, PA.

BREVITY—Identify by IEN - 2483 If you write the maker

The MOST USEFUL Truck.

•YOU NEED LESS SPACE TO HANDLE MATERIALS WITH A – MOTO-TRUC

23 1/2"

"Shortie" Model, Battery Operated, Walkie Type Telescopic Hi-Lift Truck.

The Shortest Truck of its Type Built.

The Moto-Truc gives you a truck of shortest overall length, due to more compact power unit—a truck that is easier to operate because of exclusive easy grip roller type handle—a truck with 12-volt or 18-volt power, costing but a few pennies per 8-hour day—a truck with four point mounting under load for stability and patented articulating hinged spring unit which holds drive wheel down on floor.

WRITE FOR BULLETIN NO. 50, and Specifications.

The MOTO-TRUC Co.
1913 E. 59th Street
CLEVELAND 3, OHIO.
Originators and world's largest exclusive manufacturers of motorized, battery operated walkie type trucks

HI-LIFT, PALLET AND PLATFORM TRUCKS

BREVITY—Identify by IEN - 2484 If you write the maker

POSITIVE CONTROL OF TANK CONTENTS!

LANGSENKAMP THREE-WAY VALVE

Provides positive one-point control of tank contents. Eliminates possibility of waste caused by accidental releasing of old-time plugs. With Langsenkamp's three-way valve, there is absolutely no seepage after short uses . . . no restriction in valve provides full flow of product. Easily installed and saves time as well.

Position No. 1— All positions closed.

Position No. 2— Straight through.

Position No. 3— To waste line.

Send for further information NOW — write

F. H. LANGSENKAMP CO.
227-238 E. SOUTH ST., INDIANAPOLIS 25, IND.

BREVITY—Identify by IEN - 2485 If you write the maker

THIS SQUIRT LOOSENS-
FROZEN BOLTS.. BEARINGS

It's fast and accurate—shoots 15 feet—a drop or a squirt. It's labeled Kroil—so you can grab it quickly when a frozen bolt, screw or bearing starts to cost expensive time or threaten production.

That is when Kroil creeps into millionth inch spaces to soften rust, dissolve gum and supply lubrication to loosen the parts. It's fast and it's positive.

"Kano Kroil always opens up the tight fitting covers on fire extinguishers for us. It is truly a wonderful preparation. We have found such covers we could not force off with a blow of a hammer. Several minutes' seepage of Kroil did the trick," so says a service organization for fire extinguishers.

Kroilers are priced at $1.50 each and are well worth it. As an inducement to try Kroil we offer the combination of one Kroiler and one gallon of Kroil—(listed at $3.50) for $4.75, f. o. b. factory.

If you are not one of the 8,500 industrial plants already using Kroil, send for a gallon on the proposition that it will loosen the most stubborn frozen part or you get your money back.

KANO LABORATORIES 1071 Thompson Lane Nashville 11, Tenn.

BREVITY—Identify by IEN - 2486 If you write the maker

NEED A GOOD GUMMER?

KING *Direct Drive* LABELLERS

Direct drive eliminates trouble, permits compact, portable, easy to clean construction. King Label Gummers are rugged, indestructible—many in use for over 15 years. Models for any labelling need—all over or marginal, for any sized label.

Write for free catalogue.

King SALES AND ENGINEERING COMPANY
204 FIRST STREET • SAN FRANCISCO 5, CALIFORNIA

BREVITY—Identify by IEN - 2487 If you write the maker

Kimpak Float Packaging

TOOL SET
Snap-on Tools Corporation

Cuts shipping costs—reduces damage in transit!

Do you handle your product with extreme care during the manufacturing process—then trust it to outmoded, inferior quality cushioning materials after it leaves your shipping room? You may not be able to answer that question if you haven't seen KIMPAK* Float Packaging at work.

It's the modern way to ship anything from delicate glassware to furniture and appliances; from tools and hardware to flowers and food. It's also one of the most efficient packaging methods in the world—giving optimum protection at minimum cost.

KIMPAK creped wadding is as neat, clean and easy to apply as wrapping paper. It's designed to absorb continuous vibration, ward off severe shocks, cushion and defend your product against roughest handling. This highly efficient cushioning material protects the finest finish from scratching, bruising, pressmarking and "burning."

Call your KIMPAK distributor today for further information, or write to Dept. IEN, Kimberly-Clark Corporation, Neenah, Wisconsin.

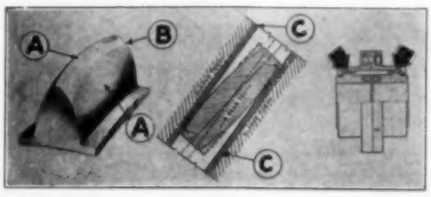
Kimpak A product of Kimberly-Clark
REG. U.S. PAT. OFF. & FOREIGN COUNTRIES
CREPED WADDING

*REG. U. S. PAT. OFF. & FOREIGN COUNTRIES

BREVITY—Identify by IEN - 2489 If you write the maker

DRIVE . . Flexible shaft coupling employs crowned and chamfered teeth

Source: AMERICAN FLEXIBLE COUPLING CO.
1803 Pittsburgh Ave., Erie, Pa.



Eighteen sizes in single and double assembly are included in new Series-GL and GH lines of gear-type flexible-shaft couplings. External teeth on the coupling hubs are crowned at their contacting surfaces as indicated at A in the illustration and are chamfered as at B. These machining operations reduce the clearances required to minimize backlash by an amount as indicated at C. The design also minimizes stress at the tooth ends. The chamfer prevents the edge of the hub teeth from striking at the roots of the internal teeth or splines in the sleeve.

Ratings range from 2.1 to 4,100 hp. per 100 rpm. with maximum shaft speed at 12,000 rpm. for the smallest unit and 1,250 rpm. for the largest one. Maximum hub bore is 1⅛ to 13 inches. Nominal maximum bore is 1 to 12 inchees. In addition to the standard design the company is prepared to supply special types for vertical and horizontal shafts and for given installation conditions.

Catalog 501, 12 pages, presents illustrated data and specifications on the Amerigear and the American flexible shaft couplings in the company's line.

BREVITY—Identify by IEN - 2490 If you write the maker

TESTING . . Bridge oscillator for variable frequency power output

Source: GENERAL RADIO CO.
273-77 Massachusetts Ave., Cambridge 39, Mass.

Type 1330-A is a new bridge oscillator for use in antenna and bridge measurements and in laboratory procedures requiring a stable variable-frequency source of moderate power output. The unit provides three audio frequencies, including power line, 400 and 1,000 cycles and a continuous range of rf. output from 5 kc. to 50 mc. either modulated or unmodulated as desired.

Output voltage is of the order of 10 volts. More than 1 watt can be delivered into a 50-ohm load over most of the frequency range. Two levels of internal modulation are available at either 400 or 1,000 cycles over the range from 15 kc. to 50 mc. Overall dimensions are 21¾ by 11¼ by 7½ inches. Weight of the new unit is 36½ pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 10

BREVITY—Identify by IEN - 2491 If you write the maker

PHOTOSWITCH ELECTRONIC *Timers*

for { *INTERVAL TIMING*
TIMED DELAY
REPEAT CYCLING
PROGRAMMING
PULSING }

Widely used for process control and machine timing where long life and precise accuracy are demanded. Unprecedented flexibility is achieved by simple external wiring changes. For intervals from 1/20 second to four minutes.

For complete information write for Bulletin 4632.

PHOTOSWITCH INCORPORATED
77 Broadway, Cambridge 42, Massachusetts

BREVITY—Identify by IEN - 2492 If you write the maker

VACUUM For Big Business

This Spencer Portable Vacuum Cleaner has 30 times the cleaning power of an ordinary home type machine. The dirt can holds 7½ cubic feet of rubbish—and is removed by a foot lever and rolled on casters to the point of disposal. It's built for big business and uses standard Spencer Vacuum tools.

This is the type used by plants having up to 500 acres of floor space to clean every night or tons of metal to pick up and reclaim or bulky raw products to convey. Portable sizes from 1½ to 15 HP. Stationary units to 100 HP. Ask for Bulletin No. 125-D.

THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT
SPENCER HARTFORD
439-D

BREVITY—Identify by IEN - 2493 If you write the maker

the "holes in our heads" are full

. . . OF COST-CUTTING IDEAS

Yes, the "holes" in our engineers' heads are full of ideas to give you newer, faster, lower cost methods of boring . . . methods that save you time and money. If your job needs a special bar or special cutter, we'll design and make it. Chances are a standard Madison cutter in the right Madison bar will give you greater production economy. Let Madison's experienced boring specialists . . . the "men with holes in their heads" . . . help you cut your boring costs. Submit your problems for recommendations by our problem solving tool design department. Of course there's no obligation.

Write for the information filled Madison Catalog. It is yours for the asking.

MADISON MANUFACTURING COMPANY
Dept. EN Muskegon, Michigan

BREVITY—Identify by IEN - 2494 If you write the maker

FOR **BETTER TEMPERATURE CONTROL**

Here's just the regulator to use when a simple device is required to maintain a constant temperature. Controls liquids or air. Prevents losses of OVER-heating. Saves fuel and labor. Users often report, "Economical, pays back its cost several times a year—gives years of reliable service". Variety of models. Will simplify your control problem.

WRITE FOR BULLETIN 339

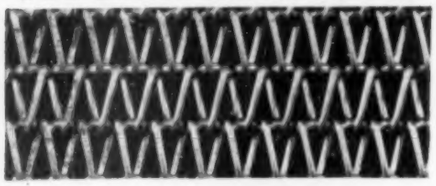
THE POWERS REGULATOR CO.
2737 Greenview Ave., Chicago 14
New York • Los Angeles • Toronto
Offices in over 50 Cities • Established 1891

POWERS

No. 11 REGULATOR FOR Heat Exchangers • Vats • Dryers
Jacket Water Cooling • Fuel and Crude Oil Heaters and Treaters
Bottle, Can, Dish and Metal Parts Washers • Drying Rooms

BREVITY—Identify by IEN - 2495 if you write the maker

WISSCO BELTS



Cover a wide utility range

In a wide variety of applications—heat treatment of metals, glass and ceramics, and for processing foods and other products—Wissco Belts have demonstrated their ability to step up production and reduce handling costs.

Wissco Metal Processing Belts operate efficiently and dependably at temperature extremes from sub-zero to 2100°F.—are specially engineered to resist corrosion and abrasion.

Write for illustrated folder describing the adaptability of Wissco Belts and the many money-saving advantages they offer you.

WISSCO METAL PROCESSING BELTS CF&I

A PRODUCT OF WICKWIRE SPENCER STEEL DIVISION OF THE COLORADO FUEL & IRON CORPORATION
Sales Office and Plant—56 Sterling Street, Clinton, Massachusetts
Executive Office—500 Fifth Avenue, New York 18, New York
Sales Offices—Atlanta • Boston • Buffalo • Chicago • Denver • Detroit • New York • Philadelphia
Pacific Coast—The California Wire Cloth Corporation, Oakland 6, California

BREVITY—Identify by IEN - 2496 if you write the maker

Valves That Keep VISCOUS MATERIALS Flowing Freely

When you handle coal tar products, asphalts, resins, waxes, molten sulfur, varnish and other materials which congeal at ordinary temperatures, you won't be troubled with clogged valves if you use EVERLASTING Steam Jacketed Valves.

The ample jacket space of these valves surrounds the ports as well as the body . . . provides extensive heating surface and correct temperature to insure fluidity. Besides, the design of the valves is quick acting . . . non-wedging . . . and self-grinding . . . and they have the straight-through flow and lasting tightness that have made EVERLASTING Valves famous for over 40 years. Write for complete information.

EVERLASTING VALVE CO., 49 Fisk Street, Jersey City 5, N. J.
Trade Mark "EVERLASTING" Reg. U. S. Pat. Off.

EV-344A

Everlasting Valves

for everlasting protection

BREVITY—Identify by IEN - 2497 if you write the maker

Improved 20-Ways

Setting new high standards of durability and performance. New door makes loading quicker and easier . . . cannot be snapped open in use. Other parts improved and strengthened. Plated to resist rust. Accelerated action drives ¼" and ⅜", or ½" staple all the way home into hard or gummy wood—with a single blow. One-hand operation leaves other hand free to hold work in position. Three times faster than hammer and nails. WRITE FOR BULLETIN 270. BOSTITCH, 456 Mechanic St., Westerly, Rhode Island.

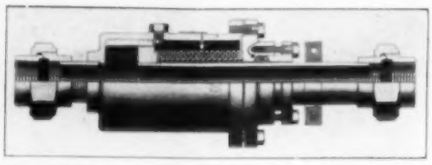
BOSTITCH® fastens it better, AND FASTER, with wire

ALL TYPES OF MACHINES FOR APPLYING STAPLES
ALL TYPES OF STAPLES APPLIED BY MACHINES

BREVITY—Identify by IEN - 2498 if you write the maker

PIPE FITTING . . Expansion joint for hot water line is bellows sealed

Source: FULTON SYLPHON DIVISION
Kingston at Rogers, Knoxville 4, Tenn.



Monel bellows forms the flexible sealing member in the housing of this new expansion joint. Flax packing, installed in the space near one end, acts as a safety element in the event of bellows rupture. The packing rides loosely until leakage causes it to swell and seal in place. The joint is made of brass except for the bellows and the fastenings.

Sizes are ½ to 3 inches. Overall length as shipped, ready for installation, is about 16 to 21½ inches. Range of action is through ½ inch. Pressure rating is 100 pounds. The joint is designed for vertical risers but it can be used in horizontal lines when correctly supported. No. 111-M is the designation.

BREVITY—Identify by IEN - 2499 if you write the maker

PLASTIC . . High gloss lacquer to surface finish molded polystyrene

Source: NEW ENGLAND LACQUER CO.
50 King Philip Road, Dept. 7, East Providence, R. I.

Coated sample upon request

Scratch resistance is combined with high-gloss finish, water-white or a range of colors, in a new lacquer the company has developed for application on molded-polystyrene products. The lacquer is applied by spraying, wiping, silk screen. It is suited for flocking and is available in various degrees of gloss from a mat finish to a mirror-like surface.

BREVITY—Identify by IEN - 2500 if you write the maker

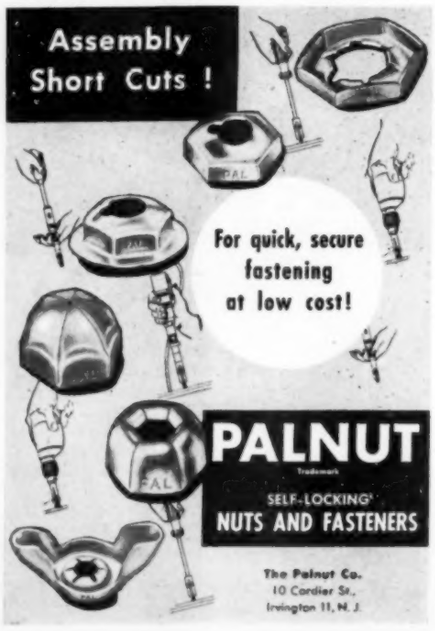
POLISHING . . Motor driven head positions universally on floor stand

Source: MURRAY-WAY CORP.
3923-27 W. Fort St., Detroit 16, Mich.

Series 60 is a new assembly of wheel spindle, belt connected motor, swivels and wormgear adjustments for right or left-hand universal positioning for a polishing wheel in any plane and at adjustable elevation. The unit is designed for use in multiple or singly at a rotating table or straight-run conveyor line for production work finishing. Two available sizes take 5 to 7½-hp. and 10 to 15-hp. motors. Both include a pneumatic control backing up the spindle for constant work pressure while traveling over uneven work surfaces.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

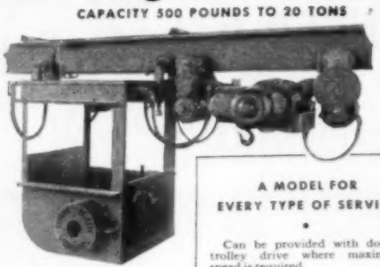
BREVITY—Identify by IEN - 2501 if you write the maker



BREVITY—Identify by IEN - 2502 if you write the maker

For "Long Haul" Economy

CAPACITY 500 POUNDS TO 20 TONS



HOISTING UNIT—
Single or multiple-speed control, with positive load brake. Balanced drive distributes stresses evenly. Oil bath lubrication assures long, trouble-free life. Sealed housing keeps out abrasive dust and moisture. Anti-friction bearings throughout.

Recommended for most economical operation over long runways.

A MODEL FOR EVERY TYPE OF SERVICE

•

Can be provided with double trolley drive where maximum speed is required.

Furnished for cycle operation when specified.

Hoist mounted crosswise to runway for close clearance work if desired.

Operator's cab either open or completely enclosed and weatherproofed.

Existing floor-operated hoists easily converted by addition of Trailer Cab in which controllers are mounted.

Write for Bulletin 177—"Aerial Railways of Industry"

Shepard Niles CRANE & HOIST CORPORATION

456 SCHUYLER AVE. • MONTOUR FALLS, N. Y.

BREVITY—Identify by IEN - 2503 if you write the maker

EXTRUDED TEFLON PACKING

Chemiseal No. 620 Extruded Teflon Packing is ideal for field maintenance or emergency use in valves, pumps, agitators or any other stuffing box application. Impervious to attack by any organic or inorganic acid, alkali or solvent; serviceable from -150° F. to 550° F.

"Chemiseal" extruded Teflon packing contains no synthetic or rubber binders (such additives tend to harden and render packing unserviceable). Also, lubrication of this shredded, oriented Teflon packing is enhanced by use of a highly acid-refined hydrocarbon, soluble in common solvents but unaffected by aqueous solutions of organic or inorganic acids or alkalis. However, No. 620 can definitely be recommended for solvent applications as the lubricant is not essential for anti-friction purposes.

Specify Chemiseal No. 620EG (impregnated with graphite) or No. 620EM (with mica). Supplied in coil form, in a loosely-woven cotton jacket. Sold by the foot, in rectangular cross-section from ¼" up by 1/16" increments. Request Catalog Nos. 620EG and 520EM.

UNITED STATES GASKET COMPANY
658 N. 10th Street • CAMDEN, NEW JERSEY

BREVITY—Identify by IEN - 2504 if you write the maker

ADEL

for PEAK PERFORMANCE

Industrial Hydraulic Equipment

ADEL Hydraulic Valves and Pumps are setting new and ever higher standards for precision in manufacturing and efficient performance in operation. Following are but a few of the wide variety of models to meet all operating conditions.

GEAR-TYPE HYDRAULIC PUMPS	DIRECTIONAL CONTROL VALVES	BY-PASS VALVES
1000 psi, 1800 rpm, 1.5 to 46.8 gpm.	4-way, 1500 psi, flows to 28 gpm.	Relief, Sequence Unloading, 30-1500 psi.
VOLUME (FLOW) CONTROL VALVES	**PILOT VALVES**	**CHECK VALVES**
Compensated type, no drain line, 1500 psi.	With or without dog or lever. 1000 psi.	Free flow, one direction only. 3000 psi.

A few select territories are still available to progressive distributors of hydraulic equipment. Inquiries invited.

ADEL *Write for complete engineering specifications and counsel*
DIVISION OF GENERAL METALS CORPORATION
10763 VAN OWEN STREET • BURBANK, CALIFORNIA

DISTRIBUTORS: Air & Hydraulic Engineering Co., New Haven, Conn. • Russ Chamberlin Company, Portland, Oregon • J. Boyd Coates, Philadelphia, Pa. • Frank T. Donnelly Company, Pittsburgh, Pa. • Noshel Engineering & Supply Co., San Francisco, Calif. • Noshel Engineering & Supply Co., Glendale Calif. • Hydraulic Brake Supply Co., Phoenix, Ariz. • Lincoln Supply Co., Providence, R. I. • Scott Equipment and Engineering Company, Dayton, Ohio • R. F. Soderling Co., Seattle, Wash. • Robert Taylor & Sons, Salt Lake City, Utah • Wyatt Sales Co., Cleveland, Ohio • Corby Supply Company, St. Louis, Mo. • Industrial Air & Hydraulic Equipment Co., Detroit, Mich.

BREVITY—Identify by IEN - 2505 if you write the maker

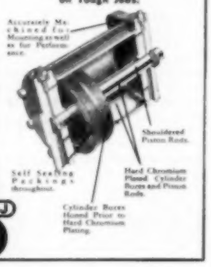
Simplify Machines . . . Save Labor with

T-J CYLINDERS

For PUSH...PULL...LIFT Jobs

Consult with T-J about your problems in power movement—pushing, pulling or lifting . . . 100 lb. or 50,000 lb. These are jobs for T-J Air and Hydraulic Cylinders to simplify your machines and equipment, save labor and cut costs! Many standard sizes and styles . . . both cushioned and non-cushioned types . . . precision-built for long life . . . dependable. Write for additional information. The Tomkins-Johnson Co., Jackson, Mich.

T-J Built to "TAKE IT" on Tough Jobs!



33 Years Experience

TOMKINS-JOHNSON

BREVITY—Identify by IEN - 2506 if you write the maker

What's U.S. Rubber doing with Plastic Pipe?

Giving it extremely high impact strength, for one thing. A single .44 cal. revolver bullet, fired at a distance of 20 yards, merely dented this piece of pipe, which is made of U.S. Rubber's new plastic, Uscolite. This amazingly strong, lightweight, versatile piping is easy to handle, won't break if dropped. Furnished in standard lengths, it can be cut to length and threaded on the job. Uscolite is resistant to most chemicals. For more information, write to address below. In Canada, write to the Dominion Rubber Company.

PRODUCT OF

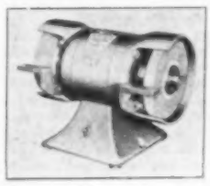
U.S. RUBBER
SERVING THROUGH SCIENCE

UNITED STATES RUBBER COMPANY
MECHANICAL GOODS DIVISION • ROCKEFELLER CENTER, NEW YORK 20, N. Y.

BREVITY—Identify by IEN - 2508 if you write the maker

GRINDING . . Bench type machine, ¼ hp. motor drives two 6 in. wheels

Source: LIMA ELECTRIC MOTOR CO.
2401 Findlay Road, Lima, Ohio



Enclosed motor with factory-lubricated sealed ball bearings is pedestal mounted and fitted with a double-extension shaft to carry two 6 by ¾-in. abrasive wheels in this new machine. Wheel guards are cast integral with the motor end frames. Adjustable tool or work rests are standard equipment. The cast-iron pedestal or base is equipped with rubber feet and mounts a toggle switch at the front.

Construction includes a 7½-ft. rubber-covered cord and plug for connection to a 110 or 220-volt single-phase 60-cycle line for operation at 3,450 rpm. A 2 or 3-phase 220 or 440-volt motor can be specified. The machine weighs 37 pounds.

BREVITY—Identify by IEN - 2509 if you write the maker

PROTECTING . . Safety hat for women workers, washable taffeta

Source: BOYER-CAMPBELL CO.
6538-42 St. Antoine St., Detroit 2, Mich.

List price is $13.50 per dozen for this new Ray-ve featherweight washable safety hat. It includes a snood with adjustment to take care of any amount of hair. Following adjustment the snood requires no further attention.

BREVITY—Identify by IEN - 2510 if you write the maker

GAGE . . Steel tape available in four lengths, 25 to 100 ft.

Source: LUFKIN RULE CO.
1948 Hess Ave., Saginaw, Mich.

Leader designates new assembly of chrome-clad steel tape that reels into a maroon-colored Vinylite covered case by operating a lever that folds flush into the case when it is not in use. Black markings on the tape contrast with the satin finish. They are bonded to the surface and sunk below it for protection against wear. The plastic case will not stain or scuff. It is fitted with a flat stainless-steel edge band and roller-equipped throat.

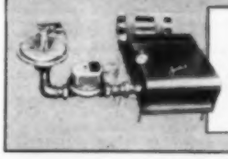
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2511 if you write the maker

FOR EASIER CONVERSIONS gas THE NEW, COMPLETE FACTORY ASSEMBLED

Janitrol

MODEL SC-05



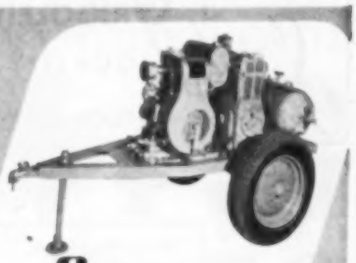
TWO UNITS, 325,000 TO 750,000 BTU PER HOUR

Among the many design features of the new Janitrol Conversion Burners simpler installation and full accessibility are most important for industrial applications. Optional equipment includes instantaneous flame failure protection with complete control panel to meet the requirements of gas utilities, city, underwriters and insurance companies.

Write today for complete specifications and performance data.

SURFACE COMBUSTION CORPORATION • DEPT. E, TOLEDO, OHIO

BREVITY—Identify by IEN - 2512 if you write the maker



Quincy COMPRESSORS

GO WHERE THEY'RE NEEDED

Portable Quincy Compressors, ranging in size from 1 to 45 c.f.m. supply compressed air "on the spot" quickly and efficiently. Select from the Quincy line of portables . . . four types of mountings, gasoline engine or electric motor drive. Write today for details and latest prices. Quincy Compressor Co., Dept. H-17, Quincy, Illinois.

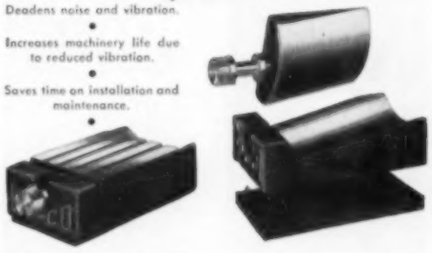
QUINCY COMPRESSOR CO., Quincy, Illinois
Branch Offices: New York • Philadelphia • Chicago
St. Louis • Dallas • San Francisco

BREVITY—Identify by IEN - 2513 if you write the maker

NEW VIBRATION ABSORBING MACHINE LEVELING

Empco JACK

Deadens noise and vibration.
•
Increases machinery life due to reduced vibration.
•
Saves time on installation and maintenance.
•



Tests have proven that "Controlled vibration means increased productivity and decreased maintenance costs." That is why the new Empco Jacks, featuring VI-SORB, the vibration absorbing mounting pads, save many times their initial cost. With the combined features of Empco's self-aligning, two-way control Jacks and VI-SORB pads, set-up and maintenance costs are greatly reduced. For complete data and prices on the new Empco Jack with VI-SORB pads, write or wire today. Immediate delivery.

EMPCO PRODUCTS

THE ENTERPRISE MACHINE PARTS CORPORATION
2737 JEROME AVENUE • DETROIT 12, MICHIGAN

BREVITY—Identify by IEN - 2514 if you write the maker

Savings that Pay Off...

ROPER ROTARY PUMPS *are quick to Service*

Above view shows how Roper Pumps are designed for easy accessibility. Not necessary to disturb pipe connections or mountings.

When an installation requires inspection because some destructive foreign element causes trouble, quick servicing design cuts down-time to a minimum and speeds the job. Furthermore, Roper replacement parts are interchangeable and available on all current models.

The exploded view above shows the detail of disassembly of a Roper Series F Pump . . . available for pressures up to 300 P.S.I. — built in 13 sizes up to 300 G.P.M.

Write for Catalog Today
Capacities to 300 g.p.m.
Pressures to 1000 p.s.i.

GEO. D. ROPER CORP.
202 Blackhawk Park Avenue
ROCKFORD, ILLINOIS

ROPER Rotary Pumps

BREVITY—Identify by IEN - 2515 If you write the maker

Symbol GRIGOLEIT OF QUALITY AND ECONOMY IN MOLDED PLASTICS

BRUSH HOLDER CAP
Screw-top caps to secure brush spring in motor.

SHIPPING CLOSURES
Protects threads from dirt and damage. Made to order in various sizes.

Your Key to Sales Success is molded plastics by Grigoleit . . . the symbol of quality and economy. A complete line of Pulls, Knobs, Pendants and threaded specialties ready for prompt delivery. Write for your copy of the full illustrated catalog today.

THE GRIGOLEIT COMPANY
"Over Twenty Years in Plastics"
7-9 NORTH ST. DECATUR ILLINOIS

BREVITY—Identify by IEN - 2516 If you write the maker

SAVE MONEY 7 WAYS..

ON PRODUCTION DRILLING!

MEYCO
Carbide Inserted Bushings Are Doing It Daily!

HOW? Like this: (1) Last longer . . . with a life—in most cases—as long as solid carbide bushings at prices that come close to the prices of ordinary steel bushings; (2) Increased life for your drill jigs and fixtures; (3) Increased life for your drills and reamers; (4) Accuracy maintained for a LONG PERIOD of time; (5) Less non-productive machine time, less lost man hours, because bushings need not be changed as often; (6) Inspection time saved, because of greater accuracy for a longer time; and (7) Less waste due to spoilage, for the same reason. Don't pass up a good bet! Get the dope on MEYCO Carbide Inserted Drill Jig Bushings today!

*PATENTED

For information and prices write for Meyco Bushing Catalog No. 18

W. F. MEYERS CO., INC., BEDFORD, INDIANA

BREVITY—Identify by IEN - 2517 If you write the maker

EVERYTHING YOU WANT TO KNOW about wire rope or chain fittings

Find the right fittings — *right away* — with Laughlin's comprehensive Data-Book.

FREE! A valuable source of time- and money-saving information on wire rope and chain fittings, together with helpful tables and other data. You may find many fittings you've been having made up as "specials" listed as Laughlin standard items.

LAUGHLIN
THE MOST COMPLETE LINE OF DROP FORGED WIRE ROPE AND CHAIN FITTINGS

MAIL THIS TODAY . . . no cost or obligation

THE THOMAS LAUGHLIN CO.
13 Fore St., Portland 6, Maine
Please send Catalog-Data Book #150 to:
Name ..... Position .....
Company .....
Street .....
City ..... Zone ... State .....

BREVITY—Identify by IEN - 2518 If you write the maker

VALVE . . Lever operated hydraulic 3 and 4 way for power cylinder control

Source: PARKER APPLIANCE CO.
17323-27 Euclid Ave., Cleveland 12, Ohio

Pressure is to 2,000 lb. for this new piston-type open-center operating valve which the company has designed for power cylinder control on various types of hydraulically operated equipment. The levers can be positioned at either end of the housing in desired position. The return port can be located for direct tank mounting. A float position can be specified in addition to regular forward, hold and reverse.

Construction includes an externally-adjustable built-in seatless relief valve. Port sizes are to ¾ inch. Pressure drop through the open center is about 32 lb. on rated 14 gpm. capacity. Flow rate to 20 gpm. can be maintained satisfactorily.

BREVITY—Identify by IEN - 2519 If you write the maker

INSULATING . . Acoustical tile, 12 by 12 by ½ in., tongue and groove

Source: WOOD CONVERSION CO.
197 First National Bank Bldg., St. Paul 1, Minn.

Available through lumber dealers

Nu-Wood, the company's fiber building product which contains thousands of sound deadening cells, is available in the form of acoustical tile carrying surface-drilled holes in addition to the cells. The tile measures 12 by 12 by ½ in., is beveled and tongue and grooved at its edges. The company's Sta-Lite surface finish is applied at the factory. Application can be by adhesives, nails, screws or Nu-Wood clips.

BREVITY—Identify by IEN - 2520 If you write the maker

SANDING . . Portable electric tool drives 4½ by 5¼ in. neoprene pad

Source: SPEEDWAY MFG. CO.
1885 S. 52nd Ave., Cicero 50, Ill.

List price is $34.50 for this new No. 150 SpeedWay sander. It employs an induction-type motor for 110-volt, 50 or 60-cycle ac. The motor is rated at 1/16 hp. and operates at 3,450 rpm. It drives a neoprene-faced pad that is backed up by neoprene balls for travel in a circular orbit with a 3/16-in. throw. The pad takes 4½ by 6½-in. takes a 4½ by 6½-in. sheet of abrasive paper which cuts out of a 9 by 11-in. standard abrasive sheet. Weight is 5 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 2521 If you write the maker

NO METAL PARTS TOO SMALL TO CLEAN *Perfectly*

INDUSTRIAL PRECISION CLEANING MACHINE

For more than a decade industry has cleaned its smallest, most precise metal parts in this machine that employs the famous L&R Centrifugal Cleaning Action. In the Work Basket, measuring 3⅝" deep by 5½" I. D., typical parts, like those shown can be cleaned, rinsed, polished and dried in less than ten minutes — with three sets of parts separated by use of triple nesting baskets shown above. To eliminate a major production headache, order your L&R Industrial Cleaner today, or write for further catalog information.

Price complete ____ $262.50

L & R Manufacturing Co., • 577 Elm St., Arlington, N. J.
Branch Offices:
55 E. Washington St., Chicago, Ill. • 355 S. Broadway, Los Angeles, Cal.

BREVITY—Identify by IEN - 2522 If you write the maker

New centrifuging developments speed chemical processing

Put current advances in centrifuging to work for you! AT&M Centrifugals, large or small, can save you time, space, costs on all types of processing including impregnation, extraction, filtration, dehydration, coating, precipitation, sedimentation. Made in all machinable metals, these centrifugals have many special features, handle a remarkable variety of materials. In fact, *because of AT&M's free wheeling drive,* they successfully handle materials that ordinarily could not be centrifuged.

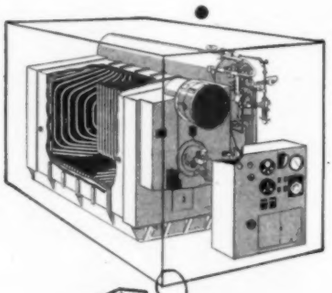
Why not send us a sample of your material for confidential analysis and recommendation? No cost or obligation. American Tool & Machine Company, 1417 Hyde Park Ave., Boston 36, Massachusetts.

SAVE TIME, SPACE AND COSTS WITH
A.T. and M.
CENTRIFUGING

BREVITY—Identify by IEN - 2523 If you write the maker

get your steam

3,500 to 25,000 lb per hr
IN THIS NEW
SHOP-ASSEMBLED UNIT



B&W Integral-Furnace Boiler, Type FM

Note these *Cost-Saving* features

Saves Erection Time and Cost • Meets Wide Range of Services • Handles Quick Load Changes • Fast Steaming • Low Maintenance • Easy Accessibility • Suitable for Outdoor Service • Burns Oil and/or Gas • Saves Fuel • Saves Space • Safe, Automatic Operation.

SEND FOR BULLETIN G-72. detailing the many advantages of this new B&W creation in low-cost steam generation. The Babcock & Wilcox Company, 85 Liberty Street, New York 6, N. Y.

BABCOCK & WILCOX
Helping Industry Cut Steam Costs since 1867

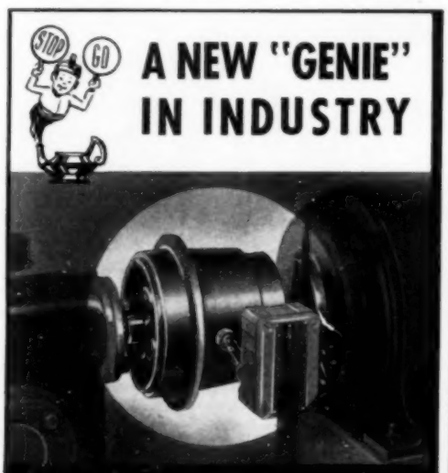
G-536

BREVITY—Identify by IEN - 2525 if you write the maker

For original installation or for repair, a Tal on-the-job bender for pipe or tubing does in seconds work that otherwise takes many minutes. Because a Tal repays its cost so quickly, and does it time and again, thousands are in use everywhere. Write today for factual bulletin.

Tal Bender, Inc. Dept. 2 Milwaukee 2, Wis.

BREVITY—Identify by IEN - 2526 if you write the maker



A NEW "GENIE" IN INDUSTRY

ANCHOR FLEXIBLE TORQUE-SENSITIVE COUPLING

A NEW TOOL FOR THE MACHINE DESIGNER & BUILDER

For the first time an automatic mechanical control unit, using increasing or decreasing torque requirements as a SIGNAL to start or stop, or initiate speed change of motors, air or hydraulic cylinders.

Operating over a wide range, this torque conscious coupling will control limit switches to cut IN or cut OUT additional power.

Cuts OFF power when work or obstruction overloads machines or conveyors.

Cuts IN or cuts OUT additional power based on torque variations.

Coupling torque range 10 to 2,000 inch-pound.

Pulley type unit torque range 20 to 10,000 inch-pound.

Twelve years in development

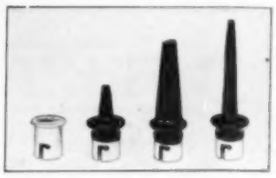
WRITE FOR CATALOG NO. 50-A.

ANCHOR STEEL & CONVEYOR CO.
DESIGNERS & MANUFACTURERS
6906 Kingsley Ave., Dearborn, Mich.

BREVITY—Identify by IEN - 2528 if you write the maker

CONNECTOR . . Bayonet type socket with plastic coated insulating sleeve

Source: WATTS ELECTRIC & MFG. CO.
P. O. Box 151, Birmingham, Mich.



Plastic coating, employing a Geon plastisol, is applied with the aid of special dipping equipment by the company in its manufacture of lamp-socket assemblies, particularly for automotive use. The new design seals the wiring in the socket to prevent entrance of dirt or moisture and makes it unnecessary to use separate protective boots, gaskets or grommets.

The dip operation can also be applied to components such as ignition coils, body-hardness clips, ordnance and aircraft connectors and sockets, ignition equipment, battery and ground straps, to seal them permanently.

BREVITY—Identify by IEN - 2529 if you write the maker

RUBBER . . Molded or fabricated as specified, neoprene base compound

Source: STALWART RUBBER CO.
152 Northfield Road, Bedford, Ohio

For range of applications

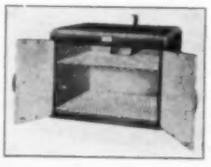
No. 808 is a neoprene-base compound that has been developed by the company for manufacture of rubber parts by molding, extruding, fabricating. The compound is characterized by its resistance to attack by petroleum products, its ability to withstand prolonged weathering, to flex constantly without cracking, and its serviceability in a temperature range between minus 80 and plus 240 deg. F.

Tensile strength is 2,315 lb. per square inch. Durometer hardness is 60. Elongation is 400 per cent.

BREVITY—Identify by IEN - 2530 if you write the maker

DRYING . . Electric oven operates on 110 volt ac. to 225 deg. F.

Source: GRIEVE-HENDRY CO.
1103 N. Paulina St., Chicago 22, Ill.



List price is $79.50 for this new Model CH-1 electrically-heated oven in the company's line, previously described IEN-11609-50. It provides a work space measuring 29 by 24 by 20½ inches. The space can be divided by application of a removable shelf which is supplied as part of the standard equipment. A drip pan also is supplied. The oven is equipped with a motor-driven fan and an adjustable damper for air change as required. The housing is made of steel with asbestos air-cell insulation. In addition to the ac. equipment the company can supply units to operate on dc. at specified voltage.

Duplicate design with four shelves and a drip pan is known as Model PL-1. It lists at $92.50.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2531 if you write the maker

If you pipe it...there's a Fairbanks valve to control it

Fig. 0236 UNION BONNET Gate Valve, 200 pound S.W.P.

Here is a typical example of the outstanding design, sound engineering and rugged construction that are built into every Fairbanks Valve. Years of experience in meeting all kinds of valve requirements for industry, have given Fairbanks Engineers a storehouse of knowledge in controlling the flow of water, steam, gas, oil, chemicals, etc. Consult them without obligation.

THE Fairbanks COMPANY
General Offices: 393 LAFAYETTE STREET, NEW YORK 3, N. Y.
Branch Offices: New York, N. Y. Pittsburgh, Pa. Boston, Mass. Rome, Ga.

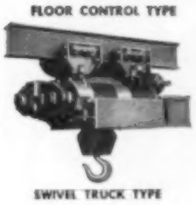
VALVES • DART & PIC UNIONS • TRUCKS • CASTERS

BREVITY—Identify by IEN - 2532 if you write the maker

NORTHERN HI-LIFT HEAVY DUTY HOISTS

FLOOR CONTROL TYPE

CAB CONTROL TYPE



SWIVEL TRUCK TYPE

ALSO STANDARD AND TRAMRAIL TWO-TRUCK TYPES

For safe, dependable handling of heavy loads in heavy-duty service, NORTHERN HI-LIFT HOISTS permit more diversified, general purpose use—wider adaptability to changing service demands.

ASK FOR BULLETIN H-110

NORTHERN ENGINEERING WORKS, 2615 Atwater St., Detroit 7, Mich.

NORTHERN CRANES AND HOISTS

BREVITY—Identify by IEN - 2533 if you write the maker

Sicon Formerly MICO

Silicone-Base High Heat-Resistant Finish

PROTECTS THIS PRODUCT AGAINST TEMPERATURES OF 870° (F.)

The interior parts of this miniature Inferno are SICON-coated.

☆ It takes an unusual finish to withstand the constant high heat generated by the combustion chamber of the Superflame Floor Furnace, made by the Queen Stove Works, Inc. Yes, SICON lengthens the life of this unit because it does not break down like ordinary finishes due to its amazing stability under high heat. SICON is the first commercially priced silicone base finish that can be applied by brush, spray or dip and which either air dries or adapts itself to any existing force drying system.

Write for data.

Manufactured exclusively by
MIDLAND Industrial Finishes
Waukegan, Ill.
ENAMELS • SYNTHETICS • LACQUERS • VARNISHES

BREVITY—Identify by IEN - 2534 if you write the maker

MAIL COUPON TODAY

Koehring 304 Cruiser Crane, mounted on rubber, goes anywhere . . . is not tied down to tracks . . . increases storage area . . . travels 5.37 m.p.h. . . lifts up to 50,000 lbs. . . is one-man operated. Send for more information and complete facts.

KOEHRING COMPANY, Dept. P, MILWAUKEE 10, WIS.
Please send literature on 304 Cruiser Crane for.....
.....
(Type of plant or work to be handled)
NAME.....TITLE.....
COMPANY.....
ADDRESS.....
CITY & STATE..... IEN KIM3

KOEHRING 304 CRUISER CRANE
KOEHRING COMPANY, Milwaukee 10, Wis.

BREVITY—Identify by IEN - 2535 if you write the maker

SHORT-CUT to IRREGULAR SHAPES

THE HEINRICH HEAVY-DUTY
HANDNIB
A HAND-OPERATED COMBINATION NIBBLING, SHEARING, PUNCHING AND ROD CUTTING MACHINE.
(With Swivel Base)

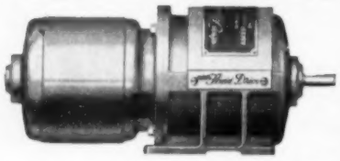
Capacity: Nibbling and Shearing 3/16" flat stock . . . Punching Holes up to ½" in ⅛" sheets . . . Rod Cutting 3/16", ¼", 5/16" and ⅜" round bars.

Ask for descriptive folder.
Prompt delivery.

THE NATIONAL MACHINE TOOL CO.
2536 CLARK STREET • RACINE, WISCONSIN

BREVITY—Identify by IEN - 2536 if you write the maker

FREE TRIAL OFFER



At no cost or obligation to you, we invite you to try an American Blower Type TM Gyrol Fluid Drive in actual production on your own machines.

We want you to see for yourself how these remarkable units save power, provide smooth acceleration, and absorb shocks.

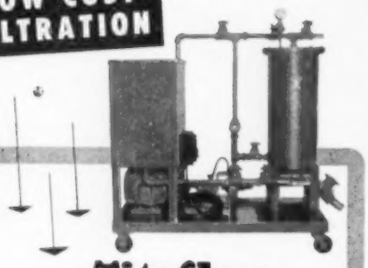
To take advantage of this offer, write us direct. Describe the machine on which you want to use the TM unit, give horsepower of present motor. Then, we'll contact you to arrange installation and trial period.

AMERICAN BLOWER
American Blower Corporation, Detroit 32, Michigan
Division of AMERICAN RADIATOR & Standard Sanitary CORPORATION

Serving home and industry AMERICAN-STANDARD • AMERICAN BLOWER
CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • ROSS HEATER • TONAWANDA IRON

BREVITY—Identify by IEN - 2537 if you write the maker

LOW COST FILTRATION



with Titeflex
The Filter with the Backwash

First, Titeflex Filters use permanent filtering elements, not bags, sheets, pads, etc. No replacement parts are required! Next, Titeflex Filters are cleaned by a foolproof backwash system, in just a few minutes, without manual labor. These features add up to efficient filtration at lowest possible cost! Titeflex Filters are made in a variety of metals, in capacities up to 10,000 g.p.h. and larger. Get the facts!

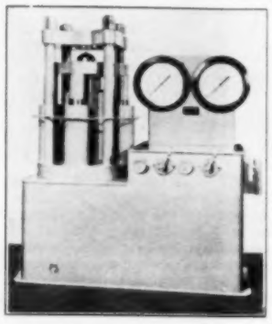
WRITE FOR FREE CATOLOG
Contains full details of sizes, capacities, motors, metals. Write for yours today.

TITEFLEX, INC.
500 Frelinghuysen Ave., Newark 5, N. J.

BREVITY—Identify by IEN - 2538 if you write the maker

TESTING . . Hydraulic machine for ductility, rates 250,000 pounds

Source: STEEL CITY TESTING MACHINES INC.
8841-45 Livernois Ave., Detroit 4, Mich.



Penetrator measuring 5 in. in diameter is employed in the company's new design of ductility testing machines, previously described IEN-8939-46. Purpose of the unit is to detect surface and sub-surface imperfections in deep-drawing steel over a comparatively large area. Penetrating pressure is to 150,000 lb. and sample-clamping pressure is to 100,000 pounds. The machine has three dies for steel to ¼ in. in thickness.

BREVITY—Identify by IEN - 2539 if you write the maker

PAINTING . . Metal primer for bare and galvanized metals

Source: WILBUR & WILLIAMS CO.
128-32 Lincoln St., Boston 35, Mass.

Packed in gallons to 55 gal. drums

Instant-Dry Totrust is a new rust-inhibitor primer for application on bare or galvanized metal surfaces to serve as a base for rubber-base paints, Vinyl coatings and spraying lacquers. The primer remains serviceable at temperatures to 350 deg. F. continuously or to 500 deg. F. for short intervals. It dries ready for recoating in 10 to 30 min. under normal atmospheric conditions. Application is on damp or dry surfaces, rusted or clean, painted or bare. It is suited also for use on wood, plaster and over old paint. Coverage is 350 to 600 sq. ft. per gallon. Color is red.

BREVITY—Identify by IEN - 2540 if you write the maker

DRIVE . . Flexible shaft coupling has rating to ½-hp. at 1,750 rpm.

Source: LORD MFG. CO.
1637-41 W. 12th St., Erie, Pa.

Neoprene is permanently bonded between two pressed-steel hubs to produce this new one-piece flexible shaft coupling. The neoprene is stressed in shear. The pressed-steel hubs are made with flats to engage milled flats on the driving ends of the shaft. Installation requires only that the coupling hubs be slid onto the shafts. Both are free to move longitudinally to compensate for float in the drive. The company will submit sample for test.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2541 if you write the maker

DRIVE SCREWS FASTER!

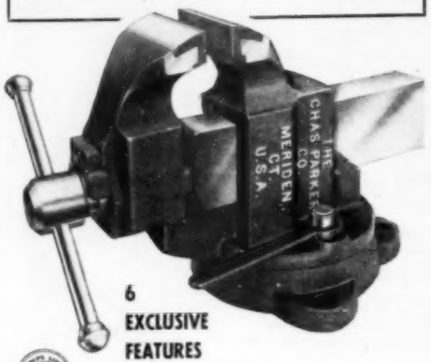
"SHAKEPROOF" POWER SCREW DRIVER
Hopper feeding eliminates tedious, costly separate screw handling—speeds driving up to 60 or more screws per minute! Ideal for driving Sems or Thread-Cutting Screws as well as machine screws, sheet metal screws or wood screws.

SEE HOW YOU CAN CUT SCREW DRIVING TIME — SEND FOR YOUR FREE COPY OF THE SHAKEPROOF POWER DRIVER BOOKLET TODAY

SHAKEPROOF inc.
Division of Illinois Tool Works
2501 NORTH KEELER AVENUE,
CHICAGO 39, ILLINOIS

BREVITY—Identify by IEN - 2542 if you write the maker

PARKER VISES
Complete Line Including
HINGED PIPE VISES • WOODWORKERS' VISES



6 EXCLUSIVE FEATURES
Write for catalog
Sold 100% through distributors

THE CHARLES PARKER CO.
MERIDEN CONNECTICUT

BREVITY—Identify by IEN - 2543 if you write the maker

BETA CHART PENS

Beta Fountain Pens hold two to four times the ink of ordinary chart inking pens. Regardless of the line thickness Beta Pens produce a smooth unbroken and uniform line. Pens shown are approximately actual size and can be arranged to reduce time interval between static and differential lines to only a few minutes. Beta Pens are especially suitable for seven day records. Price $1.00 (lower prices in quantities).

Send for bulletin No. 110.

AMERICAN RECORDING CHART CO.
3113 E. 11th St. • Los Angeles 23, Calif.

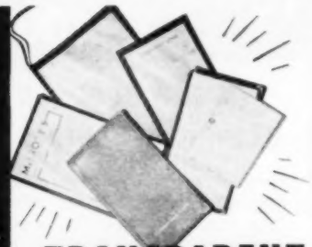
Available for Early Delivery

BREVITY—Identify by IEN - 2544 if you write the maker

Keep work-records FRESH and CLEAN!

Types and sizes for
SHOP ORDERS
JOB TICKETS
COST DATA
WORK CHARTS
BLUE PRINTS
CARDS & PASSES
INSPECTION CHARTS
MACHINE RECORDS
INSTRUCTION DATA, etc.

SOLD BY LEADING STATIONERS



TRANSPARENT ACETATE HOLDERS

Crystal clear Ful-Vu plastic protective holders for shop or factory use offer positive protection against dirt, smudges, grime and damage. Besides the types shown, Ful-Vu can produce any desired shape or size unit to order. Write for catalog—or send details of your requirement for prompt quotation.

Ful-Vu PROTECTS GLORIFIES SYSTEMS OF DISPLAY

COOKS' INC., Camden, N. J.

BREVITY—Identify by IEN - 2545 if you write the maker

COLOR FILL—

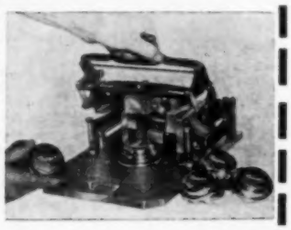
STAMPED, DIE CAST, EMBOSSED PARTS

The NEW—FAST WAY

The ACROPRINTER REG. U. S. PAT. OFF.

PICKS UP COLOR ENAMELS OR COLOR INKS AND WITH A SPECIAL ARCOPRENE DIE, APPLIES THE FILLING INTO DEPRESSED SURFACES.

MADE BY THE MAKERS OF MARKING AND NUMBERING MACHINES, NAME PLATE STAMPING MACHINES, ETC.



ACROMARK

ELIZABETH, N. J.

7 MORRELL STREET

"THE ORIGINAL MARKING SPECIALISTS"

BREVITY—Identify by IEN - 2546 if you write the maker

IS MR. O. V. IN YOUR STOCK?

Perhaps you feel that any kind of cold rolled strip steel in your inventory is better than none. We agree that in times of critical shortages this may sometimes be true. But OVERSIZE VARIATION in strip thickness, a not uncommon characteristic in some strip and/or slit-sheet products can materially reduce your productive yield per ton—is a hidden cost that increases your steel bill. Best way to control Mr. O. V., locked in a stock permanently, is to specify, when deliveries are possible, Thinsteel precision cold rolled strip in low carbon, high carbon (annealed or tempered) and stainless grades. Thinsteel assures you extreme accuracy to gauge and uniformity of all characteristics in coil after coil - - means more feet per pound, more finished parts per ton.

CMP's expansion program, which includes new rolling facilities and auxiliary equipment, is under way and will help to provide, during 1951, additional capacity to meet increasing demand for Thinsteel products.

CMP THINSTEEL TRADE MARK

the Cold Metal Products co.

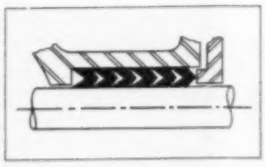
YOUNGSTOWN 1, OHIO

NEW YORK • CHICAGO • DETROIT • INDIANAPOLIS
LOS ANGELES • ST. LOUIS

BREVITY—Identify by IEN - 2548 if you write the maker

SEALING . . Teflon V-rings, chemically inert, for stems and rods

Source: UNITED STATES GASKET CO.
P. O. Box 93-A, Camden, N. J.



Chemiseal 810V is a new V-ring in the company's line of Teflon plastic seals. The ring applies in packing valve stems and reciprocating piston rods where a seal is required against leakage of chemical fluids in a temperature range between minus 150 and plus 550 deg. F. The rings will hold tight over long intervals in which a valve is not operated.

They will seal against leakage on slow-moving piston rods. They are characterized by their low coefficient of friction and by the relatively low gland pressure required to effect the seal. The ring is available in sets or in lengths of the V-section material from which rings can be cut. Sizes are available to apply in packing boxes of specified dimensions.

BREVITY—Identify by IEN - 2549 if you write the maker

PUMP . . Hand operated unit to dispense liquid from barrels, drums

Source: GENERAL SCIENTIFIC EQUIPMENT CO.
2785 W. Huntingdon St., Philadelphia 32, Pa.

No. 444 is a new hand-operated pump that inserts into a drum or barrel through the bung opening and clamps in the bung by a collar and thumb screw. The pump barrel fits 1½ and 2-in. openings in 15 to 55-gal. drums. List price is about $7.

BREVITY—Identify by IEN - 2550 if you write the maker

TESTING . . Moisture indicator for foundry sand and similar materials

Source: CLAUD S. GORDON CO.
3002 S. Wallace St., Chicago 16, Ill.

A sample of material to be checked in this new Catalog-3060 Moisture Tester is filled into the weigh pan on the housing in an amount that will balance the weight set up in the mechanism. The heat lamp above the pan is then swung into position and turned on to dry the sample. The dial, which was set initially to zero, then is reset to balance and the reading that appears will be the moisture content. Dimensions are 11 by 16 by 22 inches. Weight is 32 pounds. A test cycle of operation on the new unit takes 2 to 5 minutes.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2551 if you write the maker

CUT ABSENTEEISM from COLDS, SICKNESS

Glycolator

CONTROL OF AIR-BORNE VIRUS AND BACTERIA

Costs only pennies per day

Kill the cause of respiratory ailments and you reduce lost time. GLYCOLATOR method reduces air-borne germs to a safe level even in heavily occupied rooms with odorless vapors of triethylene glycol. Regal GLYCOLATOR shown treats 100,000 cu. ft. of air per hour. Low initial cost, operates for pennies per day. Other sizes for all types of conditions. For specific information . . .

WRITE *Glycolator* DIVISION
IRON CITY CHEMICAL COMPANY
Valencia, Penna.

BREVITY—Identify by IEN - 2552 if you write the maker

"FLATWEAVE" SLINGS

Cut materials handling costs with Roebling "Flatweaves"

"FLATWEAVE" SLINGS are tops! Their broad, flat-bearing surface prolongs sling life. "Flatweaves" speed up operations because they're extra flexible, kink-resistant, and easy to handle.

Write for free copy of the "Roebling Sling Data Book." It gives the whole story about "Flatweaves", plus money-saving facts on the full Roebling line . . . a sling for top efficiency and economy on every job. John A. Roebling's Sons Company, Trenton 2, New Jersey.

ROEBLING

BREVITY—Identify by IEN - 2553 if you write the maker

FASTER . . . MORE EFFECTIVE FIRE CONTROL

WITH THE **ANSUL** *Stream Pattern*

PATENT PENDING

plus

BETTER HEAT-SHIELD PROTECTION

***only* Advertise the Nozzle! . . .**

. . . because the *nozzle* on your ANSUL Dry Chemical Fire Extinguisher is *water-tight* . . . it *won't* become inoperative due to corrosion or caking of dry chemical within the working parts . . . the most inexperienced man in your plant *can use the ANSUL extinguisher effectively . . . and only Ansul has a nozzle* to meet all of these requirements!

If your hazards require special long range straight stream nozzles, you can get Ansul Extinguishers equipped with these nozzles at no extra cost. With Ansul Dry Chemical Fire Extinguishing Equipment you have not only the best fire protection but also a choice of models and designs to meet your requirements.

EXCLUSIVE FEATURES: Water-tight construction • Provides a modified cone-shaped stream pattern without hole in the center of the stream • Each nozzle gas pressure tested after assembly • Special spring loaded packing to insure lasting water-tightness. • Designed for use by inexperienced operators. • Low velocity, more effective stream of dry chemical.

Send for File No. 648. You will receive our catalog, a Periodic Inspection Record Chart, "Fundamentals of Fire Extinguishment" and information about Ansul Dry Chemical Piped Systems for automatic protection.

ANSUL CHEMICAL COMPANY
FIRE EXTINGUISHER DIVISION • MARINETTE, WISCONSIN
DISTRIBUTORS IN ALL PRINCIPAL CITIES IN THE U. S., CANADA AND OTHER COUNTRIES

BREVITY—Identify by IEN - 2554 if you write the maker

The **PRATT & WHITNEY KELLERFLEX CARBIDE**

DI-BUR TRADE MARK

OVERCOMES THE *2 main burring difficulties*

1. SLIVERS

Ordinary burs make long, needle-sharp slivers that work into operators' hands, even through gloves. DI-BUR's *diamond fluting* overcomes this difficulty — breaks up the slivers into harmless, powdery chips.

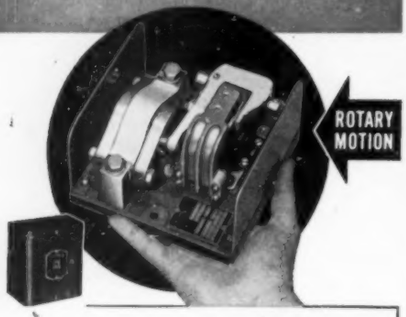
2. SPEED

Ordinary burs require a very high rpm, often higher than obtainable with "regular" equipment. DI-BUR's *diamond fluting* requires only ⅓ these speeds. Result: effortless control—smooth cutting on any contour, right down to the nose — better, faster, more economical work with "regular" equipment. Made in over 30 shapes and sizes.

PRATT & WHITNEY

BREVITY—Identify by IEN - 2555 if you write the maker

NEW..Magnet-Operated Valve



• Fast Operation • Low Pressure Drop • Long Life • Low Power Consumption • Compact • Accessible • Easily Installed.

Write for Bulletin 9043 Type C, Square D Company, 4041 N. Richards Street, Milwaukee 12, Wisconsin

Ask Your Electrical Distributor for Square D Products

SQUARE D COMPANY

DETROIT • MILWAUKEE • LOS ANGELES

BREVITY—Identify by IEN - 2556 if you write the maker

• Longer Service
• Less Maintenance
• Greater Dependability

GOLDEN-ANDERSON

Cushioned Swing Check Valves

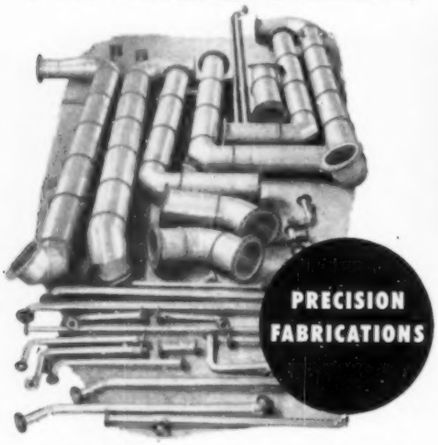
Especially designed for use on water lines, to allow full pipe line flow with minimum pressure drop. The adjustable cushion chamber on side of body permits rapid closure of valve, and prevents any slapping or banging of disc against seat on reverse flow.

Why not send for new technical Bulletin W-1?

Golden Anderson Valve Specialty Company

2079 KEENAN BUILDING · PITTSBURGH 22, PA.

BREVITY—Identify by IEN - 2557 if you write the maker



Naylor's fabrication service provides a dependable source for fittings, manifolds, piping and other equipment to meet your precision requirements. Made in carbon steel, stainless steel (Nos. 304, 316 and 347), monel, nickel, and copper alloys.

Send specifications for quotation.

NAYLOR PIPE COMPANY

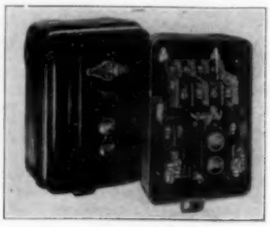
1235 E. 92nd St., Chicago 19, Ill.

New York Office: 350 Madison Avenue, New York 17, N. Y.

BREVITY—Identify by IEN - 2558 if you write the maker

MOTOR CONTROL . . Magnetic starter, to 5 hp., 220 volt, 1, 2, 3 phase

Source: FURNAS ELECTRIC CO.
1008 McKee St., Batavia, Ill.



Start-stop control with thermal overload protection for single and poly-phase squirrel-cage motors and for primary control of wound-rotor motors equipped with secondary control is provided by this new magnetic starter. It is available in general-purpose or weather-proof enclosure measuring 6 by 4½ by 8½ inches. Rating is to 5-hp. on 220-volt or 7½ hp. on 440-volt ac. A feature in the construction is provision for addition of switches for additional control or power circuits on each side of the terminal board.

Catalog 50, 16 pages, provides excellent illustrated detail information covering construction, operation, capacities, prices on the starter and on the company's magnetic contactor and relays and switches.

BREVITY—Identify by IEN - 2559 if you write the maker

CLEANING . . Petroleum emulsion to replace hot chlorinated solvent

Source: NORTHWEST CHEMICAL CO.
9308-12 Roselawn Ave., Detroit 4, Mich.

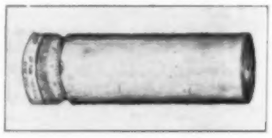
Takes place of a degreasing operation

Addition Agent No. 230 designates new material for use with a petroleum solvent supplied by the user locally to prepare a two-phase bath into which work parts are dipped to remove dirt, grease and foreign matter. The bath also can be prepared by adding 10 to 50 per cent of the company's No. 3 emulsion cleaner directly to water. In both cases the baths can be heated to a maximum 160 deg. F. to speed the cleaning action. Agitation is required in certain cases and the cleaning operation is followed by a spray rinse. Work can be kept on racks throughout the operation.

BREVITY—Identify by IEN - 2560 if you write the maker

LATHE TOOL . . Micrometer stop mounts in lathe turret for stock feed

Source: GILMORE ENGINEERING CO.
27-31 E. Madison St., Chicago 2, Ill.

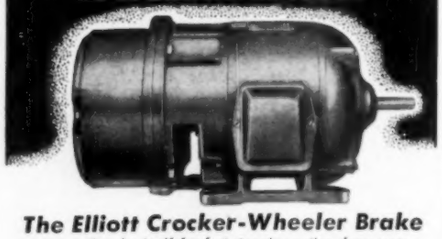


Rev-Del designates new adjustable stock-feed stop in which a revolving head graduated in thousandths can be turned to adjust the length of stock feed in a screw machine or turret lathe. The stop is made of alloy steel and is hardened and ground. It is made in five shank diameters from ⅝ to 1¾ inches. Maximum axial adjustment is $\frac{7}{16}$ in. on the smallest, ⅜ in. on the largest. List price is $12.50 to $26.50.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2561 if you write the maker

EVERYTHING YOU WANT IN A BRAKE MOTOR!



The Elliott Crocker-Wheeler Brake

is in a class by itself for *fast stopping action, long wear* and *compactness.* It can be mounted on double shaft extension NEMA standard D flange or C face motors without the need of mounting brackets or adaptors. With a dependable, smooth running Elliott C-W motor, it's a unit that will give you maximum service and top-notch performance.

SEND FOR THIS BULLETIN

It gives you all the details of construction, application and complete data as to sizes and motor frames. Ask for Brake Motor Bulletin SL-610-1 and address Elliott Co., Dept. N, Jeannette, Pa.

CW-24

ELLIOTT COMPANY

General Offices & Main Plant Jeannette, Pa.

CROCKER-WHEELER DIVISION . . . AMPERE, N. J.

Branch Offices and Representatives in Principal Cities

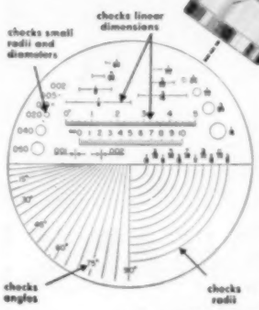
Elliott Approved Service Shops Cover the Country

BREVITY—Identify by IEN - 2562 if you write the maker

new POCKET COMPARATOR

(pat. applied for)

Saves time and money inspecting small dimensions



A precision optical measuring instrument for fast, accurate inspection of small dimensions. Save time and money measuring wear on cutting tools, checking forms and dimensions of punches, dies and gauges—as well as radii, angles, chamfers, threads and small holes on production parts.

PRICE $36.00 ORDER TODAY

a product of BELL & HOWELL CO. *distributed by*

Write for FREE descriptive folder

See Your National Tool Co. Representative or Local Jobber

NATIONAL TOOL CO.

11220 Madison Avenue Cleveland 2, Ohio

BREVITY—Identify by IEN - 2563 if you write the maker

WORKS LIKE DYNAMITE!

but a safe cleaner for aluminum

The Original Sunk HYDRO-SEAL

world's most powerful solvent for cleaning carbonaceous tars, carbon, paint from pneumatic tools, internal combustion engine parts, diesel injector nozzles, oil burner nozzles, etc.

a Di-Phase solvent
27 times faster than lye

self-emulsifying and self-scouring

extreme solvency — terrific penetration

free of causticity and toxicity —safe to handle

brightens aluminum without etching, loss of weight or dimension

available in 5—55 gal. sz. ready to use Kits

send for technical data sheet

IMMEDIATE DELIVERY 1 GALLON OR A TANK CAR

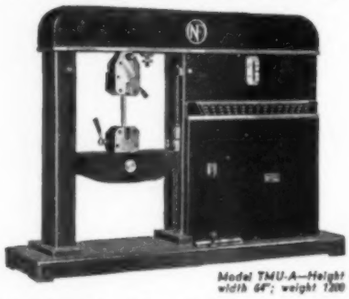
CURRAN CORP. Mfg. Chemists LAWRENCE, MASS.

122 South Canal Street

BREVITY—Identify by IEN - 2564 if you write the maker

It Will Pay You to Make Your Own Tests with

NATIONAL FORGE UNIVERSAL TESTING UNITS



Model TMU-A—Height 44"; width 64"; weight 1200 lbs.

The National Forge Universal Testing Machine, Model TMU, is compact, accurate, dependable, easy to operate and moderately-priced.

Wide working clearances, long stroke, quick-action simplified variable-speed control, improved grips and a wide spread of load scale ranges adapt this modern, streamlined unit to production, research or school instruction tests of a great variety of materials and specimen sizes. A.S.T.M. accuracy requirements are guaranteed.

Three load scale ranges: Model TMU-A—0-30,000, 0-6000, 0-600 lbs. Model TMU-B—0-15,000, 0-3000, 0-300 lbs.

For details, write for Brochure 501.

TESTING MACHINE DIVISION

NATIONAL FORGE & ORDNANCE COMPANY

Dept. EN Irvine, Warren County, Penna.

BREVITY—Identify by IEN - 2565 if you write the maker

VIBRATION Fatigue Tests POINT THE WAY TO IMPROVED PRODUCTS

MODEL 100VA
CAPACITY 100 LBS.
Produces Vibrations Vertically. All Controls In Easy Reach.

You can be sure if your products pass a vibration fatigue test—substantiates design and construction materials—frequently exposes excessive material. Many things can be learned from tests. A "must" for electronic, aircraft and automotive parts and assemblies. Hundreds in use. Models to handle parts from 10 lbs. to 100 lbs.—choice of vertical or horizontal table movement. Frequencies of 600 to 3,600 v.p.m. Special machines to order. Catalog F contains treatise.

Made by makers of ALL AMERICAN PRECISION DIE FILING MACHINES

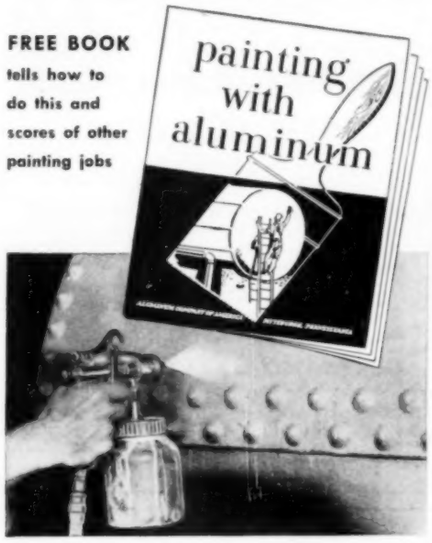
ALL AMERICAN Tool & Manufacturing Co.

1012 FULLERTON PKWY. CHICAGO 14, ILL.

BREVITY—Identify by IEN - 2566 if you write the maker

How to *Brighten* industrial equipment with just one coat

FREE BOOK tells how to do this and scores of other painting jobs



31 PAGES OF USEFUL INFORMATION

New free book tells how to get better paint results at lower cost . . . how to buy and apply the right aluminum paints.

Alcoa does not make paint. We have prepared this book so you can know about the many new improvements in aluminum paints; can buy the correct paints without lengthy specifications and tests; can apply them best for lasting protection and good appearance.

This book gives worth-while maintenance painting tips, includes coverage tables, tells what aluminum paints to use inside and out, on wood, metal, masonry and heated surfaces. For your free copy, attach the coupon to your letterhead and mail today.

ALUMINUM COMPANY OF AMERICA
Paint Service Bureau, 1786C Gulf Bldg., Pittsburgh 19, Pa.
Please send me a free copy of: *"Painting with Aluminum"*.
Name (Please print) _____
Address _____
City _____ State _____

Look for this shield on aluminum paints made by many paint manufacturers using ALCOA PIGMENTS.
The RIGHT aluminum paint for this job is ALUMINUM METAL & MASONRY PAINT.
ALCOA ALUMINUM ALBRON

BREVITY—Identify by IEN - 2568 if you write the maker

PROTECTING . . Safety cup goggle with molded rubber detachable mask

Source: WILLSON PRODUCTS INC.
111 Thorn St., Reading, Pa.

A snug fit is assured over a wearer's eyes for the company's heavy-duty cover-all safety cup goggles by addition of a new padding mask. It attaches to the goggle by a beaded molding slipped over the rims of the eyecups in a firm light-tight joint. The mask is available as an accessory with the company's cup goggle. It can be bought separately for application to this same goggle now in field service. It is replaceable and can be supplied or changed without use of tools. The soft rubber provides a comfortable fit and also adds clearance for the goggle when it is worn over prescription spectacles.

BREVITY—Identify by IEN - 2569 if you write the maker

HANDLING . . Safety disposal can to hold hazardous waste liquids

Source: PROTECTOSEAL CO.
1918-22 S. Western Ave., Chicago 8, Ill.

Particularly for laboratory use

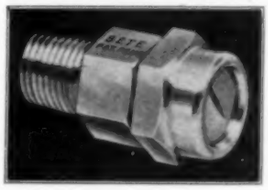
Two sizes, 2 and 5 gal., to employ on a bench or floor are available in a new Series 5000 safety disposal can. Both are made of 22-gage Type-316 stainless steel with welded seams. A 3⅝-in. spout is silver-soldered to the body and carries a removable stainless-steel flame arrestor. The spout is fitted with a spring-closed cap mounting a Thiokol gasket and an opening lever.

Beakers, tubes containing waste chemicals and flammable liquids can be emptied into the spout at arm's length when the cap is locked open. A ball handle is spot welded to top.

BREVITY—Identify by IEN - 2570 if you write the maker

SPRAYING . . Fan pattern nozzle, interchangeable discs, 1/0 to 10 gpm.

Source: BETE FOG NOZZLE INC.
276-80 Main St., Greenfield, Mass.



Series F is a new design of nozzle employing a brass base and cap for application in a ¼-in. pipe fitting. The cap threads on the base to take any of 13 interchangeable stainless-steel discs providing flow rates of 1/10 to 10 gpm. and fan-spray angles of 50 to 90 degrees. The spray pattern is somewhat heavier in the center than at the edges of the fan. Overspraying is minimized. A built-in removable strainer can be specified in the construction.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2571 if you write the maker

the No.1 money saver for your plant

DEWALT

gives you more work for your money in:
- *PLANT MAINTENANCE*
- *PATTERN SHOPS*
- *CRATING AND BOXING*

This versatile, all-purpose DeWalt is never idle! In *your* plant, it can take care of all your woodworking needs—quickly, accurately and safely. It is *many* machines in one! Simply by changing the cutting tool, you have another machine! Write for catalog. DeWalt, Inc., 103 Fountain Avenue, Lancaster, Penna.

DEWALT A subsidiary of American Machine and Foundry Co.

BREVITY—Identify by IEN - 2572 if you write the maker

CONTROL POWER BETTER

ROCKFORD CLUTCHES

BREVITY—Identify by IEN - 2573 if you write the maker

Pheoll SPECIAL INDUSTRIAL FASTENERS

Advantages of Cold Worked Fasteners
1. Increased tensile strength
2. Greater toughness and fatigue resistance
3. Uniformly high quality
4. Lower material costs
5. Reduced production costs

OTHER PHEOLL PRODUCTS
Machine Screws • Cap Screws
Wood Screws • Brass Washers
Philips Recessed Head Screws and Bolts • Sems

- FIT INDIVIDUAL ASSEMBLY NEEDS
- SPEED JOINING OF UNUSUAL PARTS

Difficult assembly problems are solved profitably with Pheoll cold worked special fasteners—designed and manufactured for specific applications. These fasteners are made to order ready for assembly and can be furnished complete with such secondary operations as drilling, slotting, fluting, pointing, knurling, tapping, swaging and roll threading. Use permits design advantages that will reduce your overall product cost.

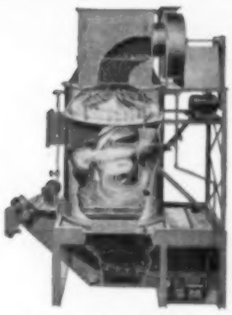
TYPICAL COLD WORKED UNITS INCLUDE—
Screws, bolts, studs, plastic inserts, rivets, thumb screws, wing nuts, small gears, tongue and clevis segments, terminals, rods, links, stems, arms, plugs, prongs, points, hooks and many other fasteners of special design in various metals.

Pheoll MANUFACTURING COMPANY • 5700 Roosevelt Road • Chicago 50, Illinois
SCREWS • BOLTS • NUTS — *Industrial Fasteners and Holding Devices*

BREVITY—Identify by IEN - 2574 if you write the maker

SUPPRESS DUST WITH WATER

and reduce every particle to harmless sludge!



Cutaway view showing Hydro-Clone system of blading and baffling.

Whiting Hydro-Clone—Type CV—precipitates heavy particles in the precleaner . . . then removes the fine particles in the axial tube and disintegrator section directly above this tube. The resulting sludge is directed to an auto-ejector type tank, and all water is recirculated.

The water also removes obnoxious gases and dangerous fumes.

Hydro-Clone Equipment has no cloth screens or bags to clean, burn, or wear out . . . no spray nozzles to clog . . . no moving parts. Capacities from 2,000 to 40,000 cfm. Write for Bulletin FY-162. Also available in low headroom type—Bulletin FY-165.

WHITING CORPORATION
15629 Lathrop Ave.
Harvey, Illinois

FREE
New booklet of Practical Information on Dust Collection. Ask for Bulletin FY-142

BREVITY—Identify by IEN - 2575 if you write the maker

THE FAMOUS MULTIFORM BENDER CUTTER

Produces Without Special Tooling — Saves Die Costs Saves on Expensive Presses

The illustration at the left shows just a few pieces produced on our famous Multiform Bender-Cutter. This efficient machine is useful in all lines of trade.

No. 5 Air Model

FIVE-IN-ONE-TOOL
IT BENDS FLAT AND TUBULAR STOCK INTO ANY SHAPE. CUTS AND PUNCHES FLAT STOCK

J. A. RICHARDS CO. 907 NORTH PITCHER ST. KALAMAZOO 60F, MICH.

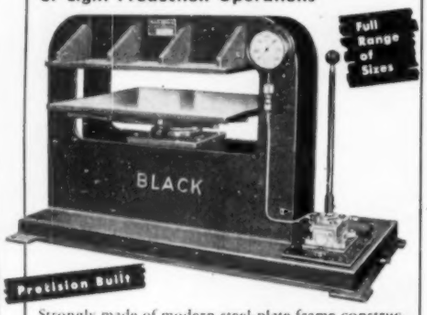
BREVITY—Identify by IEN - 2576 if you write the maker

BLACK BROTHERS

HAND OPERATED . . .

HYDRAULIC LAMINATING PRESS

for Laboratory and Experimental Work or Light Production Operations



Strongly made of modern steel-plate frame construction, this press will offer years of excellent service. Variations may be had in the width of platen, vertical opening, length of stroke, and total pressure applied. Write for literature.

THE BLACK BROTHERS CO., INC.
MENDOTA, ILLINOIS, U. S. A.

BREVITY—Identify by IEN - 2577 if you write the maker

In the hushed interior of this roomy, airy Burgess-Manning Acousti-Booth you hear easily . . . clearly while telephoning. A thick blanket of sound-absorbent material lines the walls to soak up noise. You can talk in a normal voice without strain.

Doorless construction. Easy to maintain. Movable. Handsome appearance. Wall or floor models.

Hear Here!

You can hear clearly in this quiet atmosphere

Mail Coupon For Free Booklet

Burgess-Manning Company
743-A East Park Ave.,
Libertyville, Ill.

Please send me your booklet describing Burgess-Manning Acousti-Booths.

Name _____

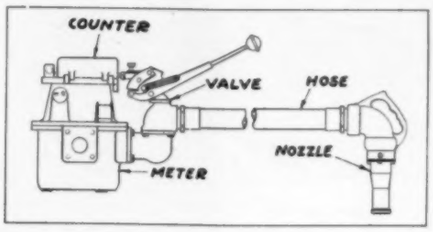
Firm Name _____

Street _____ City _____ State _____

BREVITY—Identify by IEN - 2578 if you write the maker

PACKAGING . . Predetermining meter measures liquids into a container

Source: A. O. SMITH CORP.
5715 Smithway St., Los Angeles 22, Calif.



Quantities from 25 to 79 gal., in gallon increments, or from 06 to 216 liters, in two-liter increments, can be specified for predetermined delivery by this new meter. The equipment is supplied for specified sizes of containers to be filled and units of measurements for which the correct repeating counters and interchangeable quantity gears can be supplied. A single gear change is required to change the quantity setting and can be accomplished without special tools.

Operation is initiated by moving the hand lever. Filling then proceeds at full speed to a predetermined point where a slow-closing cam controls shut-off to prevent foaming over. This action can be adjusted to suit the characteristics of various liquids.

A record is made on two counters, one of which registers the total meter through-put. The other is reset design to indicate the number of filling operations or of containers filled. The 1½-in. hose measures 40 in. in length in standard construction. The 1½-in. filling nozzle is equipped with a light back-pressure valve to retain the fluid in the hose in order to prevent unnecessary drainage.

BREVITY—Identify by IEN - 2579 if you write the maker

TESTING . . Torque indicator checks tightness of screw fastenings

Source: MORRILL & MORRILL
30 Church St., Room 326E-A, New York 7, N. Y.

Torac trade names new spring-controlled indicator to check the tightness of screw fastenings in any of four ranges maximum at 2, 5, 10 and 20 inch pounds. It consists of a hollow body, ball-bearing conical head, rear end cap, the interchangeable springs, interchangeable screwdriver bits and a cap wrench.

A selected spring is inserted in the body to connect between the rotating head and the stationary cap. Turning the handle then results in rotation to provide an indication on a circular scale when the unit is applied on a fastening.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2580 if you write the maker

REDUCE PRODUCTION COSTS—F.O.S. Tape is handy, versatile, inexpensive. Simplifies production in *many* ways . . . Stays put—but can be removed quickly without requiring "cleanup." Let SEAMLESS analysts show you how to save time and money with F.O.S. No obligation! . . . *Write today for samples and prices.*

Finest Quality Since 1877

REG. U. S. PAT. OFF.

INDUSTRIAL TAPE DIVISION
THE SEAMLESS RUBBER COMPANY
NEW HAVEN 3, CONN., U. S. A.

BREVITY—Identify by IEN - 2581 if you write the maker

SAFETYMIX

EXTRA SHOWER SAFETY . . . at no extra cost

PROTECTS AGAINST SUDDEN SCALDS
. . . Safetymix, world's leading pressure-actuated non-scald shower valve gives safety in the shower. Safetymix automatically shuts down flow if either hot or cold water fails.

HOLDS SHOWER TEMPERATURE CONSTANT
. . . Even with excessive pressure fluctuations up to 85%, Safetymix still maintains constant discharge temperature.

LIFETIME SHOWER VALVE
. . . The most rugged shower control valve made. Only Safetymix has the patented Flow Control Spindle with but *one* moving part to control *all* valve functions. Built to last a lifetime.

GET FREEDOM FROM COSTLY MAINTENANCE
. . . Safetymix is designed with self-cleaning action to prevent clogging and save water. All parts accessible from the front. As easy to fix as a faucet.

100,000 Installations Can't Be Wrong. Used by U. S. Army, Navy, Merchant Marine, colleges, industrial plants, hotels, clubs, hospitals, apartments and homes.

Send for bulletin and prices.

SAFETYMIX — MADE BY THE MAKERS OF THE NEW SYMMONS TEMPERING-CONTROLLER

Symmons ENGINEERING COMPANY
791 TREMONT ST., BOSTON 18, MASS.

BREVITY—Identify by IEN - 2582 if you write the maker

IT'S HERE!

Grafo R-3

A Smokeless Colloidal Graphite

FORGING COMPOUND

that

Increases die life
Insures surface quality
Eliminates fire hazards

A WORKING SAMPLE SENT ON REQUEST

Other Grafo Colloidal Products Available For All Industrial Lubrication

"Grafo" Colloidal Graphite may be obtained in water, petroleum oil, castor oil, in concentrated, semi-concentrated and ready-to-use mediums.

Write Us Regarding Your Special Applications

GRAFO COLLOIDS CORPORATION

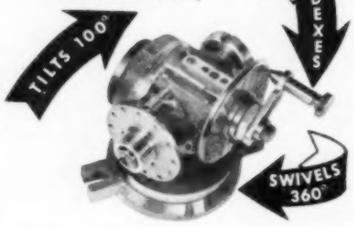
MANUFACTURERS OF Grafo COLLOIDAL PRODUCTS

SHARON, PENNSYLVANIA

BREVITY—Identify by IEN - 2583 if you write the maker

THE *unusual* ELLIS DIVIDING HEAD

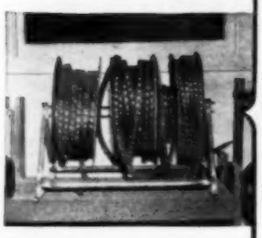
FOR FASTER PRODUCTION!



"Versatile" is the word for the unusual Ellis Dividing Head. This beautifully designed and built unit can extend the profit and production possibilities of your mills, grinders, drill presses and jig borers. It has 6½" swing, or 11" swing when used with riser blocks. Its fully universal action provides every needed setting, so that most work can be completed without rehandling. Work may be held between centers, or in chucks or collets. Write for catalog giving complete details!

NICHOLS-MORRIS CORPORATION
50-W CHURCH STREET, NEW YORK 7, N. Y.

BREVITY—Identify by IEN - 2584 if you write the maker



THESE 4 REELS OF VEELOS ARE *all the v-belt stock*

ONE BIG PLANT REQUIRES
1 REEL OF A
1 REEL OF B
2 REELS OF C

• Just 4 reels of Veelos—the adjustable v-belt—take care of 75 v-belt drives in this plant. Soon all 200 drives will be Veelos equipped! This plant is standardizing on Veelos for good reasons . . .

- *It saves money on v-belt inventory.*
- *It saves money when belts are replaced.*
- *It saves money because Veelos lasts longer.*
- *It saves money because Veelos gives full, vibrationless, power delivery.*

Have you the facts at your fingertips? *Send for your copy of the Veelos Data Book.*

VEELOS THE LINE V-BELT

ADJUSTABLE TO ANY LENGTH
ADAPTABLE TO ANY DRIVE

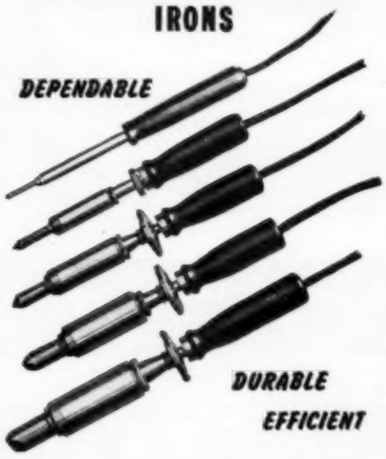
MANNHEIM MANUFACTURING & BELTING CO.
651 Meabel St., Manheim, Pa.

Made in all widths in three types: regular, oil-proof and static conducting. Also double V in A and B. Packaged on reels in 100-foot lengths. Sales engineers in principal cities; over 350 distributors throughout the country. Veelos is known as VEELINK outside the United States.

BREVITY—Identify by IEN - 2585 if you write the maker

American Beauty

ELECTRIC SOLDERING IRONS



are sturdily built for the hard usage of industrial service. Have plug type tips and are constructed on the unit system with each vital part, such as heating element, easily removable and replaceable. In 5 sizes, from 50 watts to 550 watts.

TEMPERATURE REGULATING STAND

This is a thermostatically-controlled device for the regulation of the temperature of an electric soldering iron. When placed on and connected to this stand, iron may be maintained at working temperature or through adjustment on bottom of stand at low or warm temperature.

Write for Catalog Sheets, Form No. 204-CP. Dept. SI-2

120-3

Since 1894 Always Dependable

AMERICAN ELECTRICAL HEATER CO.
DETROIT 2, MICHIGAN

BREVITY—Identify by IEN - 2587 if you write the maker

PROTECTING . . Air line respirator supplies worker with clean fresh air

Source: AMERICAN OPTICAL CO.
12-16 Mechanic St., Southbridge, Mass.

No. 2099 respirator is a new assembly of faceplece with headband, flexible tube leading to a valve that mounts on the user's belt to control air flow, and a length of $\frac{3}{8}$-in. air hose measuring 12½ to 50 ft. in length as specified. The hose connects to a shop source for clean fresh air at 9 to 25 pounds. A detachable coupling between the flexible breathing tube and the supply hose shuts off the air supply when it is detached.

The respirator is suited for worker protection in spraying operations, welding, abrasive-blast cleaning, and for work in the interiors of tanks and closed storage spaces.

BREVITY—Identify by IEN - 2588 if you write the maker

LUBRICATING . . Paraffinic type oil for sealed refrigerant compressors

Source: SUN OIL CO.
1606-10 Walnut St., Philadelphia 3, Pa.

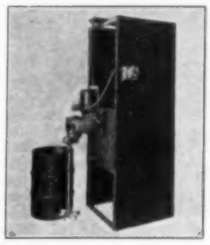
For temperature to 225 deg. F.

Sunisо 300 designates three new grades of lubricating oil with viscosity in an overall range between 150 and 530 ssu. at 100 deg. F. The oil contains an oxidation inhibitor to make it thermally stable. It is treated to prevent formation of gum and varnish. It is intended for service throughout the life of hermetically-sealed compressors as employed in refrigerating and air conditioning. This life interval is estimated at a minimum of 10 years.

BREVITY—Identify by IEN - 2589 if you write the maker

MIXING . . Motor drive impeller, for variable speed and adjustable height

Source: CONN & CO.
1528-32 Pennsylvania Ave., W., Warren, Pa.



Removable impeller is secured in a variable-speed motor-driven head mounted on a vertical slide in this new Type-VH mixing machine. The slide rides at the front of a rectangular housing where it is chain supported from a hand-operated mechanism to provide for height adjustment. Motor sizes range from ½ to 5 horsepower.

Construction can be specified in metals to suit a given application. Each assembly employs the company's patented rigid shaft coupler to quickly disconnect the impeller and shaft.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2590 if you write the maker

In every industrial center across the country there is an Ohio Gear distributor, no further away than your phone, ready to supply you with Ohio "standardized" gears and speed reducers.

Whether your need is for a spur, helical, bevel, worm or worm wheel type gear, or for speed reducers from 1/6 to 10 HP in ratios from 3 to 1 up to 3000 to 1; chances are your Ohio Gear distributor may be able to supply you from STOCK.

The Ohio Gear representative serving you is qualified to help you solve your power transmission problems through engineering with "standardized" stock gears and speed reducers. This saves you money and time.

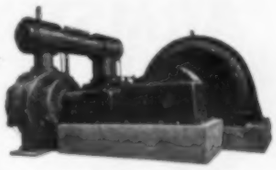
Ohio Gears and Speed Reducers have been engineered to perform to your satisfaction.

ESTABLISHED 1915
THE OHIO GEAR COMPANY
2345 EAST 170TH STREET • CLEVELAND 10, OHIO

OHIO GEARS

BREVITY—Identify by IEN - 2591 if you write the maker

Class O-CE Two-Stage Motor-driven Compressor



roller bearings throughout means cheaper maintenance

Chicago Pneumatic Class O-CE AIR COMPRESSORS have spherical roller main and crankpin bearings, and heavy-duty needle bearings at crosshead. This revolutionary innovation is made possible by recent development of oil injection method of bearing and crank disc installation and removal, requiring only hand-operated oil pump and ordinary hand tools.

Write for Bulletin 726-5

CHICAGO PNEUMATIC TOOL COMPANY
General Offices: 8 East 48th Street, New York 17, N. Y.

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

BREVITY—Identify by IEN - 2592 if you write the maker

A steel fabricator replaced an I-beam crane system with modern Cleveland Tramrail equipment and thereby doubled his tonnage output. This is a typical story, because regardless of size or type, most Cleveland Tramrail installations pay for themselves within a few months.

GET THIS BOOK!
BOOK No. 2008
Packed with valuable information

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
4239 East 285th St., Wickliffe, O.

CLEVELAND TRAMRAIL

BREVITY—Identify by IEN - 2593 if you write the maker

WHEN YOU NEED STEEL CALL RYERSON

Contact Ryerson for prompt shipment of dependable steel products. Because of great demand, all sizes are not always in stock; but you will find that we can usually take care of your requirements.

PRINCIPAL PRODUCTS

Bars • Structurals • Plates • Sheets • Tubing • Alleghany Stainless • Alloy Steel • Safety Floor Plate • Babbitt • Solder Metal Working Tools & Machinery, etc.

JOSEPH T. RYERSON & SON, INC.

Plants: New York, Boston, Philadelphia, Detroit, Cincinnati, Cleveland, Pittsburgh, Buffalo, Chicago, Milwaukee, St. Louis, Los Angeles, San Francisco

BREVITY—Identify by IEN - 2594 if you write the maker

ARMSTRONG
Drop Forged
LATHE DOGS

ARMSTRONG Lathe Dogs give extra service because they are drop forged from selected open hearth steel and are heat treated to extreme toughness and stiffness. Hubs are made large enough to permit re-tapping, screws are also of special analysis steel and are hardened at the point to prevent upsetting. ARMSTRONG Dogs come in 10 types with square head or safety headless screws, with straight or bent tails. They are carried in stock by your local ARMSTRONG Distributor.

Write for catalog.

ARMSTRONG BROS. TOOL CO.
5243 West Armstrong Ave.
Chicago 30, Illinois
New York and San Francisco

BREVITY—Identify by IEN - 2595 if you write the maker

SLITTERS AND ROLLWINDERS

For all types and sizes of roll-wound products

From cellophane to sandpaper, from bandages to brake lining, *Camachine* experience leads the way in every field of roll production. There's a *right Camachine* for all types of paper or paperboard; textiles, rubber, foil or plastic; plain, coated, laminated or tacky-surfaced materials. *Camachines* are engineered for dependable, top-quality roll production at record-breaking speeds. For information and literature regarding roll production equipment for any type of material, write to:

CAMERON MACHINE CO.
61 POPLAR ST., B'KLYN 2, N.Y.

Camachine®
First in roll production equipment

BREVITY—Identify by IEN - 2596 if you write the maker

Which job would you like to improve?

Listed below are some jobs discussed in Oakite's new 44-page illustrated booklet on Metal Cleaning. Let us help you do them with better results, greater economy.

OAKITE PRODUCTS, INC., 16A Thames St., New York 6, N. Y.
Tell me (without obligation on my part) about Oakite methods and materials for the following jobs:

- ☐ Tank cleaning
- ☐ Machine cleaning
- ☐ Electrocleaning
- ☐ Pickling
- ☐ Pre-paint treatment
- ☐ Paint stripping
- ☐ Steam-detergent cleaning
- ☐ Barrel cleaning
- ☐ Burnishing
- ☐ Rust prevention
- ☐ Send me a FREE copy of your booklet "Some good things to know about Metal Cleaning"

NAME .....
COMPANY .....
ADDRESS .....

Technical Service Representatives in Principal Cities of U. S. & Canada

OAKITE SPECIALIZED INDUSTRIAL CLEANING MATERIALS • METHODS • SERVICE

BREVITY—Identify by IEN - 2597 if you write the maker

PUMP . . Pneumatic transfer unit for non-corrosive liquids rates 22 gpm.

Source: LINCOLN ENGINEERING CO.
5732 Natural Bridge Ave., St. Louis 20, Mo.

Speed-Flo, Model 82230, is a new air-operated transfer pump for application in a 2-in. bung opening in a drum holding liquids such as coolants, thinners, lubricants, non-corrosive chemicals. It will empty a 55-gal. drum of SAE No. 30 oil in a little over two minutes.

The pump is made of steel, weighs 18 lbs., is equipped with a built-in disc-type regulator to control delivery rate. It connects by hose to an air line.

BREVITY—Identify by IEN - 2598 if you write the maker

ADHESIVE . . Phenolic resin for hot press plywood gluing work

Source: LIBBEY-OWENS-FORD GLASS CO.
2114 Sylvan Ave., Toledo 6, Ohio

Meets military requirements

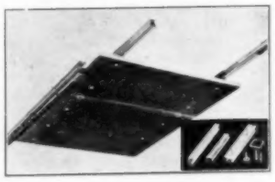
Plaskon 815-12 is a new phenolic resin adhesive that is available as a fine powdered material, brownish red in color. It has been developed particularly for hot-press plywood gluing to produce glue lines that will meet Army-Navy Aeronautical Specifications AN-A-45. Four hours of closed-faced assembly time will produce durable glue lines with negligible bleed-through. Platen temperature should be about 290 deg. F. Sufficient press time to effect full cure is about 5 minutes based on a $\frac{3}{16}$-in. three-ply birch panel.

The adhesive can be extended to 20 per cent with walnut shell flour. Caustic soda can be added to the mix of resin, water and flour to shorten normal assembly time. The material should be stored at temperatures below 80 deg. F. It will remain usable for three months at 80 deg. F.

BREVITY—Identify by IEN - 2599 if you write the maker

FASTENING . . Steel nailing channel, nails and fittings for ceilings, walls

Source: MID-WEST ACOUSTICAL & SUPPLY CO.
1230-M W. 69th St., Cleveland 2, Ohio



Metl-Lock is a new assembly method of nailing channel made of zinc-coated steel in 12-ft. lengths, snap-on splicers, wire spring clips, gypsum-board joint and end clips and three types of annular nails. The fastening equipment is designed to support gypsum-board assemblies in construction of suspended acoustical ceilings and for use as furring in masonry walls.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2600 if you write the maker

SAVE Maintenance AND Towel Costs WITH

Sani-Dri ELECTRIC Hand or Hair Dryers

Save valuable maintenance time and eliminate continuing towel expense. New, improved features make Sani-Dri faster drying . . . provide quick, automatic hand or hair drying service 24 hours a day year after year! Sani-Dri is a permanent solution to washroom sanitation and drying problems—and SAVES UP to 85% of WASHROOM COSTS!

All Sani-Dri Electric Dryers are GUARANTEED, and have carried the Underwriter's Seal of Approval for over 18 years!

SEND FOR NEW BROCHURE showing all models and installation pictures.

Distributors in Principal Cities
THE CHICAGO HARDWARE FOUNDRY CO.
"Dependable Since 1897"
3435 Commonwealth Ave. • North Chicago, Ill.

BREVITY—Identify by IEN - 2601 if you write the maker

it's paper

...BUT IT FILTERS WATER FROM FUEL OIL AT OPERATIONAL SPEEDS

In a new and unusual filter, a chemically treated Riegel paper permits removal of water from oil and gas...at a very high rate of flow. Although its use today is restricted to the armed forces, this novel filter will later have far-reaching applications in the industrial field.

It's another interesting example of Riegel's ability to make paper for almost any need. We now produce over 600 grades, many with technical properties that would surprise you. Perhaps one of these Riegel papers can help you. Just tell us what you are looking for, or send us a sample. If we can't make it, we'll gladly tell you who can.

RIEGEL PAPER CORPORATION • 342 Madison Ave., New York 17, N. Y.

Riegel

• TAILOR-MADE PAPERS FOR INDUSTRIAL USE •

BREVITY—Identify by IEN - 2602 if you write the maker

"COMMERCIAL"

Tank heads are cold formed in steel dies insuring uniformity in circumference and diameter, with smooth flanges. All styles and sizes made to 72" diameter.

Our catalogue P-1 gives our complete line, and data for tank builders — write for it.

We also manufacture heavy and medium gauge stampings.

THE COMMERCIAL SHEARING & STAMPING CO.
P. O. BOX 719 YOUNGSTOWN 1, OHIO

BREVITY—Identify by IEN - 2603 if you write the maker

JABSCO SELF PRIMING PUMPS

Patented and Patents Pending

the pump with the DUPONT NEOPRENE impeller (oil resistant)

BRONZE, STAINLESS STEEL & IRON CONSTRUCTION —CAPACITY TO 50 GALLONS PER MINUTE

1. **MORE CAPACITY**—for its weight, size and price.
2. **SELF-PRIMING**—starts instantly with high suction lift.
3. **ONE MOVING PART**—tough, long-lived.
4. **GEARLESS**—impeller outlasts metal gears.
5. **TROUBLE FREE**—simple construction.
6. **ECONOMICAL**—low cost—low maintenance.

LIQUID TRANSFER AND CIRCULATING FOR ALL INDUSTRIES

JABSCO PUMP COMPANY
2031 N. Lincoln Street • Burbank, California

BREVITY—Identify by IEN - 2604 if you write the maker

EXCLUSIVE

only

UNIVERSAL

GREASE FITTINGS

have these patented "easy-on easy-off" features

The Patented Release Shoulder and Release Groove assure an easy one-way angle release and eliminate the necessity of any twisting motion at low or high pressures. Universal Hydraulic Grease Fittings give positive sealing at high or low pressures and resist breaking, distortion and twist outs.

UNIVERSAL Couplers

Will stand 20,000 lbs. working pressures. Strongly and sturdily built . . . easy release action under all pressures. A model is available for every need. Write for your copy of the new 1951 UNIVERSAL Industrial Catalog illustrating and describing our complete line of hydraulic grease fittings and couplers for maintenance or for original equipment.

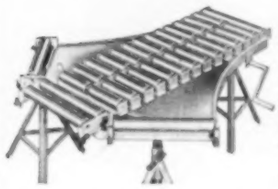
UNIVERSAL LUBRICATING SYSTEMS, INC.
785 Allegheny Avenue • Oakmont, Pa.

BREVITY—Identify by IEN - 2605 if you write the maker

BREVITY—Identify by IEN - 2607 if you write the maker

CONVEYING . . Roller type switch for movement to left and to right

Source: METZGAR CO.
417 Douglas St. N. W., Grand Rapids 4, Mich.



New design of the company's roller-conveyor section known as Flex-A-Switch employs a lever-operated screw beneath the steel bed of the curve so the rollers, or wheels, slide on the bed to assume the desired change of direction. The switch can be used with combinations of straight and 45-deg. or 90-deg. curves or will accomplish 90-deg. switching to a 180-deg. through line without having to use curved sections. The switch is available in specified widths. It is equipped with ball-bearing rolls or with ball-bearing wheels as required. Its own maximum curvature is 45 degrees.

BREVITY—Identify by IEN - 2608 if you write the maker

FASTENING . . Stainless steel nail is ring grooved to hold after driving

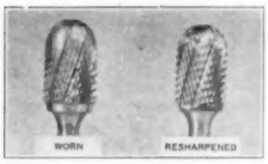
Source: AMERICAN STEEL & WIRE CO.
401-A Rockefeller Bldg., Cleveland 13, Ohio

Amering trade names new stainless-steel nail with ring grooves. These grooves force the fiber of the material into which the nail is driven to the outer edge of the rings and permits them to spring back between the rings to act as wedges. The nail is particularly suited to secure asbestos siding, shingles, and for use in both constructions. It is available in sizes from 1 to 2 in. in 14½ gage.

BREVITY—Identify by IEN - 2609 if you write the maker

GRINDING . . Resharpening service for high speed steel and carbide burs

Source: PRATT & WHITNEY
49 Charter Oak Blvd., West Hartford 1, Conn.



New service has been established by the company to recondition and resharpen burs made of high-speed steel and of carbide in order to return to service the material in worn cutters rather than to scrap it. The work is done on burs returned to the company. It includes inspection for shank runout, removal and straightening or replacement of bent shanks, resharpening in a process minimizing stock removal on special machines, company designed, for this purpose.

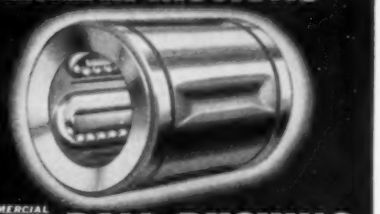
The burs are returned to the user in true-running, clean, sharp condition. The service can be applied for resharpening many times as a given bur becomes worn.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2610 if you write the maker

Announcing A New "LOW COST" Ball Bearing for Your

LINEAR MOTIONS



THE COMMERCIAL GRADE SERIES B

BALL BUSHING

Sliding linear motions are nearly always troublesome. Thousands of progressive engineers have solved this problem by application of the Precision Series A Ball Bushing.

The low-cost Commercial Grade Series B bearing is now added to the Ball Bushing line and, offered to original equipment manufacturers. This ball bearing has been developed for support of linear motions in competitively priced, volume produced products where super precision is not essential. Alert designers can now make tremendous improvements in their products by using Ball Bushings on guide rods, reciprocating shafts, push-pull actions, or for support of any mechanism that is moved or shifted in a straight line.

Competition is returning. Up-to-date engineering can be important to you!

NEW 1½" NOW AVAILABLE

LOW FRICTION • ELIMINATE BINDING AND CHATTER • SOLVES SLIDING LUBRICATION PROBLEMS • LASTING ALIGNMENT • LOW MAINTENANCE • LONG LIFE

Dept. I THOMSON INDUSTRIES, INC. MANHASSET NEW YORK
PROGRESSIVE MANUFACTURERS USE BALL BUSHINGS—A MAJOR IMPROVEMENT AT A MINOR COST

BREVITY—Identify by IEN - 2611 if you write the maker

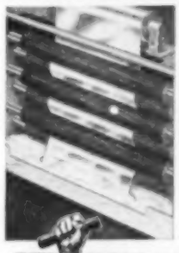
HOW PRODUCTION-WISE MANUFACTURERS

Reduce Brushing Costs

WITH FULLERGRIPT FOR:

Scrubbing Strip Brass

One brass mill reports that since installing Fullergript brushes, yearly replacement time has been cut from 450 to 30 hours. In addition, the extra-long life of Fullergript saves $1440. in brush costs alone.



Spreading Talc on Coated Materials

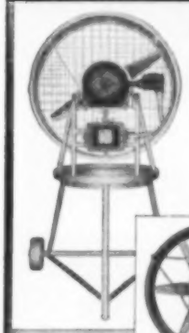
A manufacturer of raincoats improved quality by using Fullergript brushes to spread talc evenly . . . also saved valuable time formerly spent on dismantling machines for brush replacement. With Fullergript only the strips are replaced.

WRITE for FREE booklet, "Fullergript Power-Driven Brushes"

FULLERGRIPT The FULLER BRUSH CO. INDUSTRIAL DIV.
3583 MAIN STREET, HARTFORD 2, CONN.

BREVITY—Identify by IEN - 2612 if you write the maker

Fans!
FOR ALL INDUSTRY
"Standard Units or Custom Design"



Fans and blowers in a wide range of standard size units are available for specific air moving and ventilating requirements. Special, custom designed equipment can also be furnished, and our staff of engineers are at your disposal for competent advice on any ventilating problem. Send for our catalog today!

Top: Heavy Duty "MOBILE AEROSPOT." Sizes, 24" to 36" Dia.
Middle: 6-Blade "DYNAFLOW" Unit. Also available in 2 and 4 Blade types. Sizes, 16" to 36".
Bottom: "DUCTYPE" Direct Driven Blower. Single or tandem fan units. Also available with belt drive. Sizes, 16" to 36".

SOUTH BEND AIR PRODUCTS, Inc. 322 E. COLFAX AVE. SOUTH BEND, IND.

BREVITY—Identify by IEN - 2613 if you write the maker

Unbreakable "workhorses"

STRONGER, SWIFTER ForgeWelds

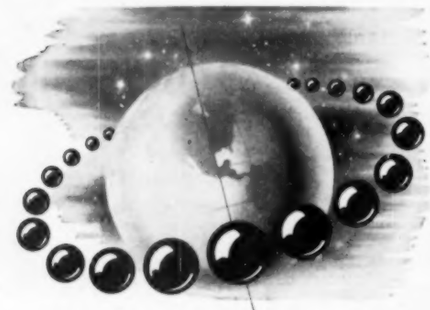
Brute strength and fluid smoothness—you get *both* in ForgeWelds. Day-in and day-out—under heaviest loads and relentless pounding—these extra-tough casters keep rolling on. And how they roll! Hauling units equipped with ForgeWelds glide along on the finest ball bearing swivels and roller bearing wheels . . . speed up handling in *any* plant. What's more, once these "workhorses" are on your trucks, replacements will be rare indeed. ForgeWelds come in all types and sizes for all needs.

Makers of Power Lift Trucks • Hand Lift Trucks • Lifters • Cranes • Dollies • Skids • Trucks & Trailers • Casters • Wheels

SERVICE CASTER & TRUCK CORP.

Executive Offices: Albion, Michigan
Plants at Albion, Michigan and Somerville 43, Mass.
See your classified Telephone Directory for name of nearest Service Distributor

BREVITY—Identify by IEN - 2614 if you write the maker



Around the World it's

HOOVER BALLS

made of

CHROME STEEL - CARBON STEEL - STAINLESS STEEL BRASS - BRONZE AND MONEL METAL

"America's Foremost Ball Manufacturer"

HOOVER BALL AND BEARING CO.
Ann Arbor, Michigan

BREVITY—Identify by IEN - 2615 if you write the maker

Powermaster®
Fully Automatic
STEAM GENERATORS
and HOT WATER BOILER UNITS
Save Fuel!

For light oil, heavy oil, gas and gas/oil firing. Steam generating units from 15 to 500 HP.—15 to 200 p.s.i. Hot water boiler units 30 p.s.i. Reduce operating costs as much as 40% — save man-hours — get clean, dependable heat and hot water. A.S.M.E. Code construction.

Write For Bulletin

ORR & SEMBOWER, INC.
860 Morgantown Rd., Reading, Pa.

BUILDERS OF DEPENDABLE BOILERS SINCE 1885

BREVITY—Identify by IEN - 2616 if you write the maker

PROTECT YOUR PRODUCTS DURING SHIPMENT with

S·S·White PLASTIC DUMMY SHIPPING PLUGS AND CAPS

HEX SOCKET TYPE PLUGS FOR N.P.T. PIPE THREADS

PLAIN TYPE PLUGS FOR N.P.T. PIPE THREADS

SHOULDER TYPE PLUGS FOR MACHINE SCREW THREADS

TYPE C CAP NUTS FOR MACHINE SCREW THREADS AND N.P.T. PIPE THREADS

Made of tough, non-brittle plastic. Available from stock molds in a wide range of sizes. Details in BULLETIN P-4601. Copy mailed on request

CONTRACT MOLDING in all standard thermoplastic and thermosetting materials.

THE S·S·White PLASTICS DIVISION
DENTAL MFG. CO.
Dept. NP, 10 East 40th St.
NEW YORK 16, N. Y.

For Your Special Information

ALL MAKERS ARE LISTED — IEN S-4

Completeness of its listings is the principal measure of true usefulness of any industrial product-source directory. We have commented on this point before in talking about Thomas' Register in which all makers are listed and we believe you agree. Any attempt to go "editorially selective" either by subject or by makers' names and addresses is certain to leave out things that should have been included. It is particularly important to consider and understand this fact now when normal sources for hundreds of things are drying up in conversion to defense production.

Thomas' Register not only lists all makers, large, medium and small, it provides a measure of size as well as location. It also lists each product in appropriate categories in its thousands of pages under all the titles by which it can be known. Hundreds of smart purchasing men are using it right now to make contact with many a little fellow who will be able to produce when the regular sources cannot because they have been drafted into defense work.

Very possibly you are one of these purchasing men or you are working with one in your purchasing department. If you are not and want a set of the books we can supply you for $15 plus handling charges.

MATERIALS HANDLING SHOW — IEN S-5

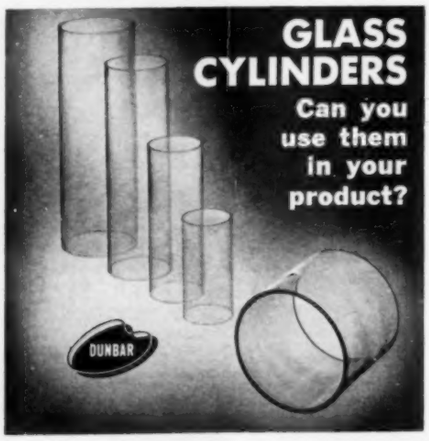
The International Amphitheatre in Chicago will be the scene of the Materials Handling Exposition, April 30 to May 4 is the time. American Material Handling Society is the sponsor. Clapp & Poliak Inc., 341 Madison Ave., New York 17, N. Y., is putting the show on. We recommend that you send a representative to view, first hand, the latest in material handling equipment and to sit in on the technical sessions.

PACKAGING SHOW — IEN S-6

The Auditorium in Atlantic City will house the 20th Annual Packaging Exposition sponsored by American Management Association for April 17th to 20th. About 250 firms have signed to exhibit materials, equipment, supplies and services for packaging, packing and shipping. Write to Edward K. Moss, Public Relations Director at the Association, 330 West 42nd St., New York 18, N. Y.

SAVINGS BONDS — IEN S-7

BREVITY—Identify by IEN - 2617 if you write the maker



For dispensers, merchandise displays, visible hoppers, lighting fixtures, sight feeders, meters, columns or any other applications, DUNBAR offers you a wide variety of cylinder sizes in economical quantities. Or we will fabricate blown glass cylinders to your specifications. We invite your inquiries. Write Dept. 964 for our Glass Cylinder catalogue No. C-51.

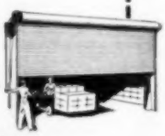
Dunbar Glass Corporation
DUNBAR, WEST VIRGINIA
NEW YORK CHICAGO CLEVELAND LOS ANGELES

BREVITY—Identify by IEN - 2618 if you write the maker

Engineered to clear any doorway for unrestricted use...

KINNEAR Rolling Doors

Every square inch of door opening remains fully usable. Traffic flows through freely and efficiently, with these interlocking steel-slat doors coiled compactly over the lintel. Ask about the many other advantages. Catalog on request.



The KINNEAR Manufacturing Co.
Factories: 2380-2400 Fields Ave., Columbus 16, Ohio
1742 Yosemite Ave., San Francisco 24, Calif.
Offices and Agents in Principal Cities

KINNEAR ROLLING DOORS

BREVITY—Identify by IEN - 2619 if you write the maker

Protect As You Project
Delicate Precision Parts

PACKAGE in

Clearsite
Plastic Selling Containers

Drills and tools, industrial jewels, taps and dies, screws, springs, nozzles, valves, fine machine parts, fishing tackle, electrical parts, and many, many others can be packaged for perfect visibility and the utmost in protection in the container that's featherlight (1/4 the weight of glass) • shatterproof • flexible or rigid • permanently printed • clear or opaque in all colors • eventually a re-use container.

Write for your FREE copy of the new, fully illustrated brochure that points up the many uses and advantages of Clearsite Plastic SELLING Containers.

Clearsite is made only by
CELLUPLASTIC CORPORATION
32 Avenue L • Newark 5, New Jersey

Milwaukee • Los Angeles • Detroit • New Haven • Cleveland • Denver • Minneapolis • Cincinnati • Atlanta • Houston • Chicago • Jacksonville • Ft. Worth • St. Louis • San Francisco • Jackson • Richmond • Montreal • Toronto

AMERICA'S #1 SOURCE FOR PLASTIC CONTAINERS
ESTABLISHED 1919

BREVITY—Identify by IEN - 2621 if you write the maker

CANNON PLUGS

UA SERIES
(Ultimate Audio Connectors)
THREE 15-AMP. CONTACTS

. . . standard components on fine electrical and electronic equipment. After 33 years of building electrical specialties, Cannon Electric continues to pioneer new and better types of connectors, maintaining its reputation for progress and development. In the 13 *major type series* of connectors will be found most of the requirements for quick disconnection of electrical circuits. For a survey of the general line, write *for Condensed Catalog.*

Latest development in the connector phase of audio engineering is the new series of microphone and sound circuit connectors designed and built by Cannon Electric to RMA Committee requirements and standards. Briefly, following features should be noted: (1) *Safety latchlock* (2) *Shockproof* (3) *FULL-Floating Socket Contacts* (4) *Splashproof* (5) *Steel plug shells* (6) *Rubber sleeve for cable relief* (7) *Grounding Contact* (8) *Gold plated 15-amp. contacts for low loss.*

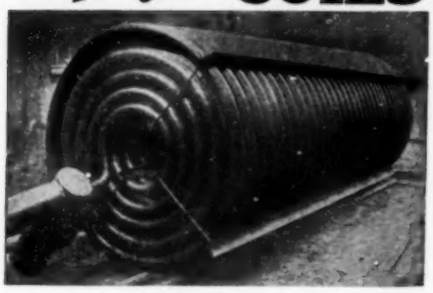
Write to Cannon Electric Development Company, Division of Cannon Manufacturing Corporation, 3209 Humboldt Street, Los Angeles 31, California or contact one of the 28 Cannon representatives located in principal U. S. A. cities. Canadian plant and offices, Toronto, Ont. Export: Frazar & Hansen, San Francisco.

SINCE 1915

CANNON ELECTRIC

BREVITY—Identify by IEN - 2622 if you write the maker

PITTSBURGH a air p pressure t tested COILS



Pipe Coils—Bends—Boiler Tubes

Built for your particular needs. Send blue print or rough sketch for Pittsburgh quotation. Also air-pressure tested Welded Headers, Welded Ammonia Receivers, Accumulators, Pipe Coils, Bends, Boiler Tubes. "Let us quote!"

Ask for Pipe Coil Data Book

Pittsburgh Pipe Coil & Bending Co.
61 BRIDGE STREET ETNA, PITTSBURGH 23, PA.

BREVITY—Identify by IEN - 2623 if you write the maker

DON'T GUESS! TEST!

Use STICHT TACHOMETERS
UNIVERSAL TYPE U
With 5 Ranges

Direct, accurate, instant readings. Ranges available: 30-12,000 RPM, 45-18,000 RPM, 60-24,000 RPM, 120-48,000 RPM, all in 5 steps. Send for Bulletin No. 750 and condensed Tachometer Bulletin No. 1046.

Stationary Tachometers furnished to read RPM, Feet Per Minute, Yards Per Minute or to suit many other applications.

HERMAN H. STICHT CO., INC.
Tachometer Headquarters
27 PARK PLACE, NEW YORK 7, N. Y.

BREVITY—Identify by IEN - 2624 if you write the maker

TESTING . . Recording amplifier for strains, pressures, vibrations

Source: BALDWIN-LIMA-HAMILTON CORP.
Paschall Post Office, Philadelphia 42, Pa.

Both static and rapidly changing measurements, made by the company's Type SR-4 strain gages, can be recorded on a strip chart carrying rectangular coordinates by this new instrument. It is a direct-writing unit of inkless design, vacuum-type voltmeter type. It assembles an ac.-powered strain-gage amplifier in which a bridge is excited at 2,500 cycles per second by a built-in oscillator. Operation is in connection with a D'Arsonval moving-coil recording galvanometer in which a current of 10 milliamperes produces a writing-arm torque of 200,000 dyne cms. and 1-cm. deflection. A paper drive mechanism completes the assembly. Controls are provided to adjust resistive and capacitive balance of the bridge. Sensitivity can be checked by depressing a pushbutton to introduce a fixed unbalance in the bridge network.

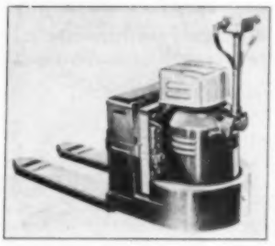
The writing arm has a heated stylus which wipes across the sensitive record paper as it is pulled over a sharp straight-edge by the paper drive to produce a black line on a white background. Standard paper speed is 25 mm. per second. Adapters and slow-speed motors are available for various combinations of speed to 25 mm. per second. A built-in time marker also can be specified.

The instrument is enclosed in a mahogany case measuring 17 by 11¾ by 9½ inches. Weight is 32½ pounds. Connections are provided for two and four-arm external gage circuits. In addition to use with straight gages, the instrument can be employed for temperature-sensitive elements. It can reproduce any electrical phenomena ranging from a few millivolts to about 200 volts.

BREVITY—Identify by IEN - 2625 if you write the maker

TRUCK . . Power lift design for two-ton pallets, steering control

Source: TOWMOTOR CORP.
1224-28 E. 152nd St., Cleveland 10, Ohio



The operator walks beside this new truck, controls its travel and hydraulic power-lift movement at the end of the steering handle. The truck is available in a range of fork lengths between 36 and 72 in. in 6-in. increments. The assembly includes a new contactor panel, a positive-action brake with dead-man control, dual rubber trailer wheels for smooth operation. A key switch permits positive turn-off of power at the dual control button to prevent accidental or unauthorized operation.

Booklet, 18 pages, "Model W Electric Pallet Truck," presents illustrated detail information covering design, construction, operation, capacity, with data on batteries and chargers.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2626 if you write the maker

THINKING OF STAINLESS?

THINK OF
ALLMETAL
FOR THE FINEST IN
STAINLESS STEEL FASTENERS

FOR QUALITY AND DELIVERY

Complete facilities under one roof assures controlled quality and immediate delivery. Standard and "AN" specs. Specials to order

ALLMETAL, Specialists in Stainless, Produce Stainless Products Exclusively

Write for Catalog K

MANUFACTURERS SINCE 1929
ALLMETAL SCREW PRODUCTS COMPANY, INC.
33 GREENE STREET NEW YORK 13, N. Y.

BREVITY—Identify by IEN - 2627 if you write the maker

M&M giant keyseaters

M & M Giant Keyseaters, built in a range of sizes, speedily and accurately cut internal keyways or splines in the bores of pulleys, gears, fly wheels or any other machine part. Special fixtures and cutters are available for unusual shaped keyways and taper work. Send us your problems.

mitts & merrill
1014 South Water • SAGINAW, MICHIGAN

BREVITY—Identify by IEN - 2628 if you write the maker

CASTELL LOCKTITE HOLDER AND IMPORTED LEAD

—the "team" that simplifies your drawing and designing

REFILL DRAWING PENCIL
(black or colored)

Patented clutch holds lead in grip of iron. With push-button release, your fingers never touch the lead. Prevents slipping, smearing, smudging.

No. 9030 CASTELL REFILL IMPORTED Drawing Leads Degrees 7B to 9H

Perfect for LOCKTITE and usable in all other standard holders. Also available in red, blue, green, yellow, carmine, orange, white and silver.

AW FABER-CASTELL PENCIL COMPANY, INC.

BREVITY—Identify by IEN - 2629 if you write the maker

MM MINNEAPOLIS-MOLINE MODERN MACHINERY

INDUSTRIAL WHEELERS

for material handling or equipment

27 hp and 51 hp max. developed engine hp Models

Manufacturing and processing plants use Minneapolis-Moline heavy duty wheel tractors on unusual yard handling operations. A wide selection of attached tools is available for moving bulk or palletized material with small investment.

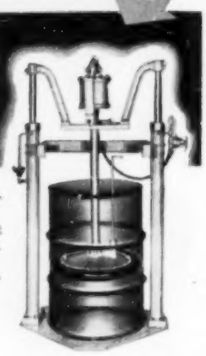
Manufacturers also use MM wheelers to mount graders, stevedore cranes, revolving cranes, and sweepers. Specifications available on request or ask for recommendation for your product. Engineering service available.

MINNEAPOLIS-MOLINE
MINNEAPOLIS 1, MINNESOTA

BREVITY—Identify by IEN - 2630 if you write the maker

Completely... empties...cleans a 55 gallon drum!

VERSATAL power operated FOLLOWER PLATE PUMP



- Pumps the heaviest materials, quickly, easily.
- Stops contamination, doesn't allow air to reach the material.
- Prevents material from drying out or "skinning over."
- Saves important money on barrel cleaning.
- 5836 lbs. atmospheric pressure on the material, assures safe, positive prime.

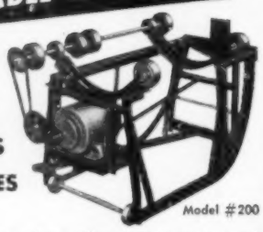
Free — write now for literature giving full data. Address Alemite, Dept. B-31, 1830 Diversey Parkway, Chicago 14, Illinois.

Another Product of Stewart-Warner

ALEMITE Versatal

BREVITY—Identify by IEN - 2631 if you write the maker

MORSE PORTABLE ROTATOR



- MIXES
- CLEANS
- TUMBLES

Model #200

A retractable caster frame offers simpler handling of containers with the Morse Rotator. Two Neoprene Drive Wheels prevent creeping. Four drive wheels give positive driving action and two idler wheels with Torrington Needle Bearings make the Morse Rotator a smoothly operating unit. Tipping lever included with each Rotator. Write for free folder showing complete Morse line.

Less motor and drive—Wt. 75 lbs. $128.50
Complete with motor—Wt. 155 lbs. $198.50

MORSE MANUFACTURING CO. INC.
133 Dickerson Street Syracuse 2, N. Y.

BREVITY—Identify by IEN - 2632 if you write the maker

Need VOLUME on SMALL PARTS like these?

Investigate MULTI-SWAGE

• If it's VOLUME you need on small tubular metal parts similar to these, be sure to look into Bead Chain's MULTI-SWAGE Process. Many prominent users of solid pins for electronic and mechanical purposes have cut costs by switching to Multi-Swaged *tubular* pins . . . without sacrificing strength or accuracy. Multi-Swage Parts serve in a wide variety of electronic and mechanical products. Send part (up to ¼" dia. and to 1½" length) and your specs for a quotation. Or write for DATA BULLETIN.

The BEAD CHAIN Mfg. Co.
TRADE MARK
59 Mountain Grove St., Bridgeport 5, Conn.
Manufacturers of BEAD CHAIN — the kinkless chain of a thousand uses, for fishing tackle, novelty, plumbing, electrical, jewelry and industrial products.

BREVITY—Identify by IEN - 2633 if you write the maker

HEATING . . Oil burner employs steam to atomize the oil

Source: COPPUS ENGINEERING CORP.
341 Park Ave., Worcester 2, Mass.

Fanmix trade names new burner to handle commercial grades of fuel oil from No. 2 to No. 6. Five sizes rate 8 million to 34 million btu. per hour. The burner is characterized by the fan mounted in its inner face for rotating drive by the rapidly moving mixture of steam and oil. The rotation also draws air through the burner into the furnace to provide the correct mixture of air and oil for essentially complete combustion at the burner base.

Net result is a short flame pattern that eliminates impingement in the furnace and produces essentially instantaneous combustion. Flue gas analysis of 15.4 per cent of carbon dioxide can be obtained with No. 6 fuel oil. Combustion is complete with 5 to 10 per cent of excess air. Balance between air intake and fuel-steam mixture is maintained at any point in the range for each burner.

BREVITY—Identify by IEN - 2634 if you write the maker

CERAMIC . . Hydrous silicate in unfired blocks for research work

Source: AMERICAN LAVA CORP.
Cherokee Blvd., Chattanooga 5, Tenn.

Company also makes samples

Unfired blocks of the company's Grade-A Lava, hydrous aluminum silicate, are now available in addition to the regular line of fired products made of this and other Lava materials. A prospective user of the insulating material can make up his own samples and fire them himself. The unfired material can be machined without difficulty and, in some cases, the model can be used without firing for test purposes although in this condition it has little strength.

BREVITY—Identify by IEN - 2635 if you write the maker

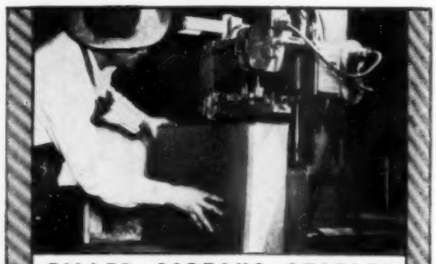
METERS . . Sub-miniature instruments to measure strength of audio signals

Source: INTERNATIONAL INSTRUMENTS INC.
329-33 East St., New Haven 11, Conn.

Two new meters, both 1½-in. sizes, have been developed to meet Specification JAN-I-6 for vu and db meters. Both enclose the company's sub-miniature D'Arsonval movement and mount dial scales measuring 1.2 in. in length with black markings on a white background or the reverse. Dielectric strength is sufficient to withstand 1,500 volts. Three housing styles include 1½-in. square and round waterproof cases and a round flange case with a commercial seal.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2636 if you write the maker

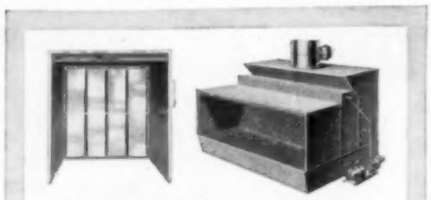


FILLED CARTONS STAPLED FROM THE OUTSIDE, TOPS AND BOTTOMS SIMULTANEOUSLY

• No "Houdini" magic involved — just an International Retractable Anvil Staple Machine. With this particular model (we have over thirty in all) the operator merely places the carton in the proper position above and below the Staple Head., trips a foot treadle, and Staples are automatically driven into both the top and the bottom. One operator can close up to 400 cartons per hour — even if they are of variable size. Great savings are effected in time, space, reduced pilferage and damage claims. Your inquiry will bring one of our distributors to show you exactly how an International Staple Machine can profitably fit into your shipping room.

INTERNATIONAL STAPLE & MACHINE CO.
HAVERTOWN 5 PENNSYLVANIA
EST. 1938

BREVITY—Identify by IEN - 2637 if you write the maker



Binks makes over 510 different styles and sizes of spray painting booths. Left: dry, floor-type; Right: Dynaprecipitor water-wash booth.

BINKS SPRAY BOOTHS

A SIZE AND TYPE TO FIT YOUR NEEDS

Whether you require a small bench-type spray painting booth, an auto booth, or a Dynaprecipitor booth which washes exhaust air five times, Binks has a model to fill your specific needs.

Binks spray booths are engineered for maximum safety, meeting the requirements of local and state authorities as well as insurance companies.

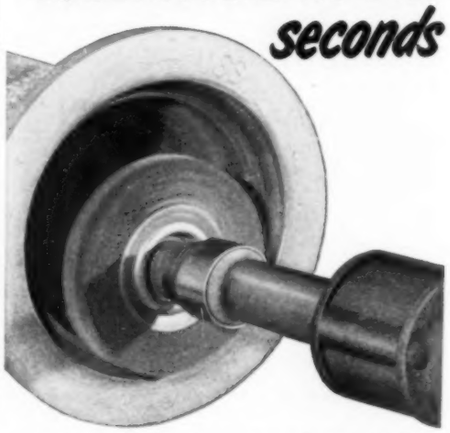
Ask your jobber, or write us for Bulletin 500C which describes spray painting booths.

Binks MANUFACTURING COMPANY
3120-34 West Carroll Ave., Chicago 12, Ill.

BREVITY—Identify by IEN - 2638 if you write the maker

This Special Pittsburgh Brush*

CLEANS RED-HOT CASTINGS in 30 seconds



* *An actual case history from the U. S. Pipe and Foundry Company, Birmingham, Alabama*

A PITTSBURGH brush provides the answer for U. S. Pipe and Foundry's problem of cleaning red-hot castings. This rugged brush works 40 hours a week, turning out thoroughly cleaned castings at the rate of one every 30 seconds . . . a speed record for any brush cleaning operation of this type.

LET PITTSBURGH ENGINEERS SOLVE YOUR BRUSH PROBLEMS

Pittsburgh's complete line of brushes of every type, for every purpose, will provide a practical, economical solution of any brush problem you might have. Drop us a line on your company letterhead for a copy of our new booklet that shows, through actual case histories, how Pittsburgh can help cut your brushing operation costs. Address: PITTSBURGH PLATE GLASS COMPANY, *Brush Div.*, Dept. M5, 3221 Frederick Ave., Baltimore 29, Md.

PITTSBURGH Power Driven BRUSHES
BRUSHES • PAINT • GLASS • PLASTICS
PITTSBURGH PLATE GLASS COMPANY

BREVITY—Identify by IEN - 2640 if you write the maker

HAVE A PROBLEM-PRODUCT THAT NEEDS A LIFETIME FINISH?

A SPECIAL SERVICE

Erie INDUSTRIAL **PORCELAIN ENAMEL**

ERIE has developed many special porcelain enamel finishes especially suited to the needs of a wide range of special service industrial products. If your product, component parts or production equipment requires a more durable protective finish, try Erie Industrial Porcelain Enamel. Send us your problem.

resists
CORROSION
ABRASION
HEAT AND COLD
THERMAL SHOCK

WRITE

THE *Erie* ENAMELING COMPANY
INDUSTRIAL DIVISION, ERIE, PENNSYLVANIA

BREVITY—Identify by IEN - 2641 if you write the maker

NAMEPLATE PROBLEMS?

Send for this Manual of . . .

MEYERCORD DECAL NAMEPLATES

FREE!

Most useful nameplate manual ever offered! 20 full-color pages show hundreds of problem solving uses of Meyercord Decals on glass, metal, wood, china, plastic, rubber, leather—curved, flat or flexible surfaces. Fast, easy application.

WRITE FOR YOUR FREE COPY BUSINESS LETTERHEADS, PLEASE, DEPT. 42-3

The MEYERCORD Co.
World's Largest Decal Manufacturer
5323 W. LAKE ST. CHICAGO 44, ILL.

BREVITY—Identify by IEN - 2642 if you write the maker

FABRICS & TAPES For ALL INDUSTRY

- COTTON
- VINYON
- RAYON
- NYLON
- GLASS

FLIGHTEX
FLIGHTEX FABRIC
FABRICS

If you use special industrial fabrics and mechanical tapes, you'll find Flightex a dependable source of supply. Our staff of engineers is at your service to help solve your fabric and tape problems.

Write for Complete Information

FLIGHTEX FABRICS, Inc.
95 Worth Street New York 13, N. Y.

BREVITY—Identify by IEN - 2643 if you write the maker

SIGNALING . . Safety sign, battery powered upon current failure

Source: ELECTRIC CORD CO.
30 Church St., Room 438, New York 7, N. Y.

Light Warden is a new housing mounted sign electrically illuminated for normal operation on a shop circuit. The unit is equipped with a relay that closes the lamp circuit to an enclosed 7½-volt standard dry battery in the event of normal current failure so the sign will continue in operation. Restoration of normal current switches the circuit back so the battery will stand idle until it is needed again.

The light is projected downward as well as through the side sign to illuminate a passage way or door. A voltmeter and pushbutton provide for momentary contact to test the battery which has an estimated shelf life of 18 months. Burning period is 8 hours. The lettering is 5 in. in height on frosted red or green vinylite plastic. Overall dimensions are about 15 by 4½ by 8½ inches. Weight is 5½ pounds without the battery and list price is $34.50.

BREVITY—Identify by IEN - 2644 if you write the maker

GAGE . . Measuring tape is self-adhering on its back face

Source: STIK-E-RULER CO.
51 Glen Ave., Watkins Glen, N. Y.

Price per roll is $3.20 postpaid

Yardsticker is a new self-adhering measuring tape. It is supplied in rolls measuring 1-in. in width by 18 yards in length. It is printed from 1 to 36 in. and repeat and can be applied on any flat surface with finger pressure. It does not interfere with the normal use of the work bench or table.

BREVITY—Identify by IEN - 2645 if you write the maker

SHEARING . . Lever operated machine for cutoff or slitting, 1/8 to 5/16 in.

Source: JULIUS BLUM & CO.
534-38 W. 22nd St., New York 11, N. Y.

Three designs, one of which is illustrated, have been added to the company's line of hand-type lever-operated shearing machines, previously described IEN-9702-50. All are made with steel-plate frames, offset for slitting work in any length. Thickness capacity ranges from ⅛ to $\frac{5}{16}$-in. mild steel. Knife length is 4¾ in. on the smallest, about 7 in. on the others. In addition to slitting the small machine has cutoff capacity to ⅜ in. based on round stock. The largest rates to ¾ inch. Machine weights are 18 to 190 lb. in the available range of sizes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2646 if you write the maker

Hard to Please?

If you're looking for really fine quality heads, available at the lowest possible price, write or wire us today. Whatever your requirements, we can supply you.

We manufacture all types of multiple spindle, fixed center, adjustable and lead screw tapping heads.

Write Today For 1951 Catalog Dept. B

Two spindle head unit—one spindle fixed, the other spindle adjustable, for the fixed positions.

Universal joint with slip spindle fixed locating plate.

Single eccentric type for equally spaced holes on bolt circles.

US HEADS SINCE 1915

UNITED STATES DRILL HEAD CO.
CINCINNATI 4, OHIO

BREVITY—Identify by IEN - 2647 if you write the maker

SO-O MUCH SIMPLER!

SOLID STEEL CONVEYOR PULLEYS

DRUM type construction provides *maximum* strength with *minimum* weight. Interchangeable hubs simplify installation, positioning, removal—insure better belt conveyors at *less* cost. Diameters 6 in. to 8 ft., all face widths. Popular sizes stocked by Dodge Distributors. Write us for complete data on the extensive range of Dodge Steel Conveyor Pulleys—all quality built for *dependable* service.

DODGE MANUFACTURING CORPORATION, 6003 Union St., Mishawaka, Ind.

DODGE
of Mishawaka, Ind.
FIRST IN POWER TRANSMISSION MACHINERY

BREVITY—Identify by IEN - 2648 if you write the maker

40 A
SQUARE
ROUND
CHISEL

You Can't Beat FORCE **DRI-FLO** WRITING IMPLEMENTS

MODEL 57

ALL-PURPOSE STENCIL AND MARKER BRUSHES

Fountain-type construction for trouble-free operation. Available with round, square, chisel or cube nibs. Instant dry or opaque models.

Send for Catalog D

THREE QUARTERS OF A CENTURY'S SERVICE

WM. A. FORCE & COMPANY, INCORPORATED
64 WHITE STREET, NEW YORK 13, N. Y.

BREVITY—Identify by IEN - 2649 if you write the maker

Unusual Drying Problems Solved with . . .

Allis-Chalmers Dielectric Heaters

FAST, UNIFORM DRYING of many products is possible with Allis-Chalmers dielectric heaters. In many processes you end overbaking, burning of thin sections, and case hardening of outer layers. Often dielectric heating is the *only* solution to a drying problem requiring speed, or uniformity.

Continuous conveyors can carry the material between the electrodes for drying. Space requirements are small. Drying takes only a few minutes.

Get engineering and cost studies from your nearby Allis-Chalmers Sales Office, or write direct.

Allis-Chalmers
Milwaukee 1, Wis.

A-5001

ALLIS-CHALMERS

BREVITY—Identify by IEN - 2650 if you write the maker

Backstand Method Saves Time!

Le Roi Co. cuts finishing time on forged handle from 5 minutes 11 seconds to 1 minute 32 seconds!

Problem: The Le Roi Company, in Cleveland, Ohio, used set-up wheels to finish forged paving breaker handles. This finishing operation required 5 minutes 11 seconds on the average for each handle . . . was too long and too costly.

Solution: The Le Roi Company switched from the set-up wheel to the backstand belt for this finishing job.

Result: An Armour abrasive belt was used and finishing time was reduced to 1 minute 32 seconds per forged handle . . . *saving 3 minutes 39 seconds for each handle!*

If you are grinding, polishing or finishing flat or contoured surfaces, cast pieces, stamped pieces or forged pieces, the backstand belt method can help you. Write today for our free booklet, "Facts about Backstand Belt Grinding and Polishing."

We recommend buying through your industrial distributor

ARMOUR *Coated Abrasives Division*

Armour and Company • North Benton Road • Alliance, O.

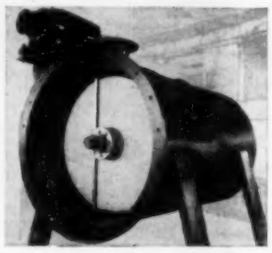
BREVITY—Identify by IEN - 2651 if you write the maker

BREVITY—Identify by IEN - 2652 if you write the maker

BREVITY—Identify by IEN - 2653 if you write the maker

FILTERING . . Disc type unit for liquids, has cake removing brushes

Source: SPARKLER MFG. CO.
Lake St., Room L, Mundelein, Ill.



Nylon brushes are mounted between the hollow perforated discs which mount on a hollow shaft in this new Model SC liquid filter. The brushes are connected to a cage extending the length of the filter interior. The cage is revolved by hand or power drive. A little water is flushed through to the outlet drain and the brushes wipe the disc faces when the filter requires cleaning. Accumulated matter drops to the bottom of the housing and is washed out through the drain to waste.

Filtering action in normal operation is by flow of the liquid from the housing interior through synthetic cloths covering the disc faces to the interior of the discs and from there through the hollow center shaft. Solids are retained on the faces until wiped away by the brush action and the backwash. The filter is suited particularly for services requiring a minimum of down time and where water or other reclaimable or low-price liquid is involved.

Flow rate is normal at about 4 gpm. per sq. ft. of filtering surface. Thus capacities range from 60 to 1,200 gpm. in the 15 to 300 sq. ft. minimum and maximum sizes. Higher rates can be maintained under favorable conditions. Sizes range from 4 by 2 by 3 ft., to 8 by 6 by 6 feet.

BREVITY—Identify by IEN - 2654 if you write the maker

PROCESSING . . Ultrasonic generator for research uses in a laboratory

Source: MASSA LABORATORIES INC.
3-7 Fottler Road, Hingham, Mass.

Metal cleaning and descaling at very high speed and at room temperature, dissolving of substances such as gum arabic in water, filtering of ultra-fine particles, rapid penetration of dyes into textile fibers are representative applications for the company's new Model GA-1010 ultrasonic equipment in connection with laboratory research.

The assembly employs a 1-kw. transducer operating at about 24 kc. with an exposed flat vibrating surface of 20 cm. The structure is oil filled and is provided with a water-cooled radiator for continuous operation. Power is supplied to operate the transducer by ultrasonic equipment assembled in a rack measuring 70 by 22 by 17¼ in. and connecting to a 110-volt, 60-cycle ac line. On the rack face are dials to adjust frequency and output.

The transducer will activate a glass or metallic container measuring about 4 in. in diameter. One is shown in position on the transducer assembly at the front of the rack shown.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 2655 if you write the maker

BREVITY—Identify by IEN - 2656 if you write the maker

BREVITY—Identify by IEN - 2657 if you write the maker

BREVITY—Identify by IEN - 2658 if you write the maker

BREVITY—Identify by IEN - 2659 if you write the maker

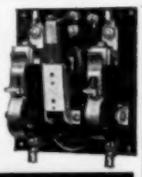
Zenith

Performance . . .

Zenith means "highest point." This literally describes Zenith dependability, "on the dot," as shown by records of long trouble-free, maintenance-free service in widest range of control uses.

Zenith automatic controls

Cover the field; Magnetic Contactors, Remote Control, Reset, Interval and Process Timers, gearless, clutchless Impulse Timers, Program Clocks — also special equipment for your special needs.

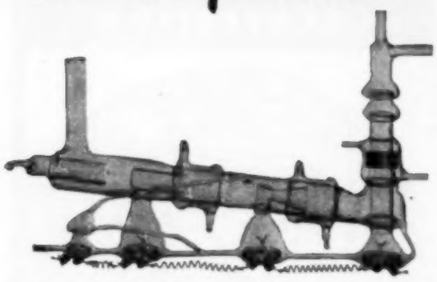


WRITE NOW FOR COMPLETE CATALOG!

ZENITH ELECTRIC CO.
146 W. WALTON ST., CHICAGO 10, ILLINOIS

BREVITY—Identify by IEN - 2660 if you write the maker

For *educating electrons*



EDUCATED electrons are being called on for more and more difficult tricks in today's "vacuum" tubes. The higher the vacuum, the better they perform. The sharpest-focussed beams and the longest reliable operating lives are found in tubes exhausted to the utmost degree that modern technology permits.

For the development laboratory, a DPi glass diffusion pump as pictured here can give you the best vacuum that man can produce. The ultimate vacuum it gives without the aid of a cold trap is 5×10^{-8} mm. Hg. With a cold trap, 10^{-9} mm. Hg is attainable.

DPi invented the multi-stage fractionation principle and the Octoil®-S Vacuum Pump Fluids that make such vacuum possible. DPi's program to make really high vacuum work with ease and economy goes on continuously. Whether you're interested in a pound of low-vapor pressure gasketing, a chamber where experimental models of new electron tube ideas may be tried out quickly and inexpensively, or a complete exhaust system for a tube factory, your problems will receive careful attention. Merely write *Distillation Products Industries,* Vacuum Equipment Department, 761 Ridge Road West, Rochester 3, New York. (Division of Eastman Kodak Company).

DPi

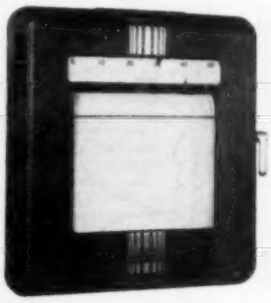
high vacuum research and engineering

Also . . . vitamins A and E . . . distilled monoglycerides . . . more than 3400 Eastman Organic Chemicals for science and industry

BREVITY—Identify by IEN - 2662 if you write the maker

RECORDING . . Two-pen instrument records two functions against time

Source: LEEDS & NORTHRUP CO.
4934 Stenton Ave., Philadelphia 44, Pa.



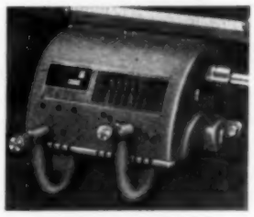
Two circuits for electronically - amplified measuring, two balancing motors, and two recording pens are assembled in a standard housing in this new two-pen Speedomax instrument. The circuits can be supplied to work with thermocouples, Thermohms, strain gages, tachometers, thermal converters, pH cells, and similar types of primary elements. The instrument will operate controls or alarms.

The recording pens operate overlapping or side by side and either across on full scale or on a specified portion of the full width. Response speed for full-scale pen movement is 3, 2 or 1 second, as specified. Chart speed, on the Y or time axis, can be selected in a range between 1 and 1,800 in. per hour. The instrument traces one curve in red ink and the other in black. The index pointers are red and black to correspond. Any standard single range can apply to both pens or the ranges can be different. The curves are continuous on the 9⅞-in. chart.

BREVITY—Identify by IEN - 2663 if you write the maker

LATHE . . Swing is 14½ or 16 in., employs new quick-change gear box

Source: SOUTH BEND LATHE WORKS
301 E. Madison St., South Bend 22, Ind.



New assembly of the company's standard 14½ and 16 in. engine lathes mounts a quick-change gear box in which two tumbler levers are shifted to obtain desired screw-thread pitches, power longitudinal feeds, each in 48 steps. Shifting one lever changes the feed from coarse to fine for roughing or finishing cuts on the work.

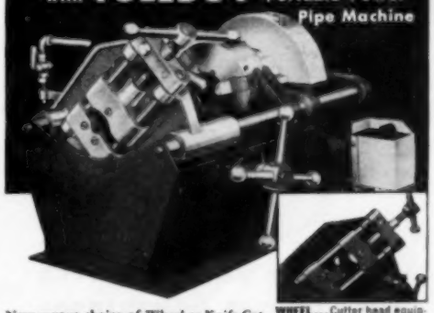
Screw-thread range is standard at 8 to 224 per inch. The stud gear connecting the change box to the machine spindle is changed for an additional series of coarse pitches ranging from 4 to 7 threads per inch. There is provision for a special stud and intermediate gear needed to cut metric screw threads, diametral-pitch worm threads and other special threads. Regular machine guards are designed so they will enclose the metric or other gearing.

The gear box encloses precision cut steel gears with ground and fitted shafts riding in ball and roller bearings. The lead-screw shaft revolves in an annular ball bearing and has a precision thrust bearing to eliminate end play and cam action. An oil reservoir lubricates the gear assembly.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2664 if you write the maker

NOW . . . YOUR CHOICE!
***Wheel or Knife* CUT-OFF**
with TOLEDO 2" Portable Power Pipe Machine



Now—your choice of Wheel or Knife Cut-Off with this great TOLEDO No. 999 2" Power Pipe Machine! Speedy and practical for cutting, threading and reaming all pipe sizes up to and including 2", and bolts from ⅝" to 1½". Threads 2" pipe in 22 seconds, cuts off in 10 seconds. Compact . . . portable . . . high production . . . reduces your costs! Write for bulletin. The Toledo Pipe Threading Machine Co., Toledo, Ohio.

WHEEL . . . Cutter head equipped with two rollers and one cutter wheel which is self-centering, quickly adjusted, cuts off rapidly.

KNIFE . . . Four cutter knives leave a straight square-end cut without burr. May be re-sharpened many times.

TOLEDO
FOR PRECISION PIPE TOOLS

BREVITY—Identify by IEN - 2665 if you write the maker

PRESSING, CRIMPING, RIVETING

Rejects slashed. A dozen Multipress units bring new speed and economy to several different operations in the assembly of automobile door locks. User likes quiet, safe, low-cost operation.

When you do it with *MULTIPRESS*® — you do it for LESS

T.M. Reg. U.S. Pat. Off.

Another case record . . . more proof that, on an amazing range of jobs in nearly every industry, Multipress is the most efficient, lowest-cost answer available. Featuring advance valving and design, Multipress uses modern, oil-smooth hydraulic power to achieve safe, easy, accurate production *at new high speeds.* Sizes and capacities from 1 to 50 tons. Widely interchangeable controls, operating features and accessories make it easy to tailor standard Multipress units to your exact needs, *at low cost.* Write us today.

The DENISON Engineering Co.
1138 Dublin Road Columbus 16, Ohio

DENISON Hydr-Oil-ics

BREVITY—Identify by IEN - 2666 if you write the maker

Reduce your refractory Costs with...

Johns-Manville FIRECRETE*

Cast your own refractory shapes and linings with J-M Firecrete . . . ready within 24 hours.

3X Firecrete—3000F Refractory Concrete, for linings and special shapes subjected to *3000F soaking temperatures.*

H. T. Firecrete—High Heat Duty Refractory Concrete for exposure to 2400F-2800F.

Standard Firecrete—Intermediate Heat Duty Refractory Concrete for monolithic constructions to 2400F.

L. W. Firecrete—Insulating Refractory Concrete—For direct exposure to 2400F.

*Reg. U. S. Pat. Off.

Johns-Manville BLAZECRETE*

Build and repair refractory linings with J-M Blazecrete. Applied by slap troweling or gunning. Ready for use overnight.

3X Blazecrete—3000F Hydraulic Setting Refractory for heavy patching. *Withstands soaking heat to 3000F.*

Standard Blazecrete—Intermediate Heat Duty Hydraulic Setting Refractory. Builds and repairs linings up to 2400F.

L. W. Blazecrete—Hydraulic Setting Insulating Refractory for temperatures to 2000F.

For further information, write Johns-Manville, Box 290, New York 16, N. Y.

JM Johns-Manville REFRACTORY PRODUCTS

BREVITY—Identify by IEN - 2667 if you write the maker

FREE SANITARY SURVEY!

Let your Dolge Service Man make a complete sanitary survey of your premises with a view to helping achieve more effective, efficient, economical maintenance.

Send for Booklet No. 12

Dependable **DOLGE**
WESTPORT, CONNECTICUT

BREVITY—Identify by IEN-2668 if you write the maker

Planting Seed

Anyone who plants seed haphazardly can expect haphazard results. Planting seed *properly* takes a lot of care.

It's the same way with our business. We get a lot of small orders, and welcome them. But, like most businessmen, we want our small accounts to grow into larger ones. We've found that the only way to get *big* orders, is to get *small* orders and do them well. That's been a continuing policy with us. We've made gears from thousands of patterns, and we have the engineering staff to provide any special gear in any size, for any purpose. We like to feel that our garden of customers grow from well-cultivated seed. THE EARLE GEAR & MACHINE CO., 4707 Stenton Ave., Philadelphia 44, Pa.

It's good business to do business with EARLE

EARLE GEARS

BREVITY—Identify by IEN-2669 if you write the maker

Popular with *Everybody!*

Changeable Letter Bulletin Board
The message you want—when you want it!

DAV-SON INDUSTRIAL BULLETIN BOARDS

Employee bulletins, safety messages, production records all get maximum attention when you use DAV-SON Bulletin Boards. There is a DAV-SON Bulletin Board for every purpose.

- Changeable Letter Boards
- Cork Back Pin-Up Boards
- Indoor and Outdoor Types
- Metal or Hardwood Frames
- With or Without Locking Glass Doors
- Illuminated and Non-Illuminated
- Special Safety Displays
- Single and Multiple Panels

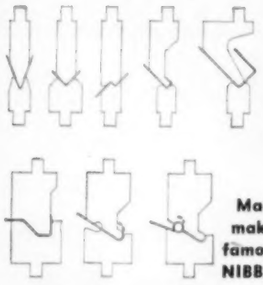
Cork Back Boards. For letters, photos, posters, etc.

Write for complete information regarding your requirements.

DAV-SON A. C. DAVENPORT & SON, INC.
ESTABLISHED 1932
311 N. DESPLAINES ST., CHICAGO 6, ILL.
MANUFACTURERS OF BULLETIN BOARDS FOR EVERY NEED

BREVITY—Identify by IEN-2670 if you write the maker

BRAKE DIES



Made from FORGED CHISEL STEEL BILLETS

Made by the makers of the famous SEMCO NIBBLER PRESS

- MANY STILL IN USE EVEN AFTER 10, 20 AND EVEN 30 YEARS.
- THEY COST MORE BUT THEY LAST FOR YEARS.

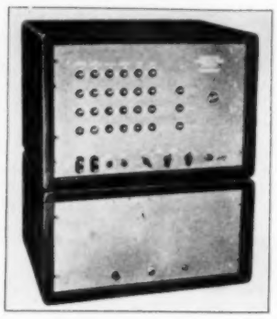
Write for estimates on your work and ask for latest literature.

SEMCO
SERVICE MACHINE COMPANY
INCORPORATED
200 MILLER STREET ELIZABETH, N. J.

BREVITY—Identify by IEN-2671 if you write the maker

COUNTING . . Electronic instrument for frequency and time measurements

Source: POTTER INSTRUMENT CO.
113-17 Cutter Mill Road, Great Neck, N. Y.



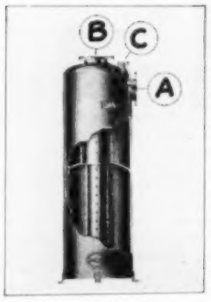
Two counting chains, a 100-kc. crystal-oscillator frequency standard and accompanying electronic switching and gating circuits make up the assembly of this new Megacycle frequency time counter. The unit is available in Model 801 for frequencies up to 1 mc. and in Model 800 for frequencies to 100 kc. Applications include frequency measurements, time interval measurements, frequency ratios, application as a secondary frequency standard, as a 1-mc. totalizing counter, and as a direct-reading rpm. tachometer.

Frequency measurements can be made by counting the number of cycles of an unknown frequency which occur during a precisely established 1-sec. interval, or by noting the time required to accumulate a predetermined number of cycles of the unknown frequency. Time intervals can be measured in increments of 10 micro seconds from common or separate input lines in intervals to a maximum of 10 seconds. Pulses or sine waves can be counted at rates to 1 million per second. An external-electromagnetic or photoelectric disc generator will serve to count shaft revolutions without actual shaft contact. The unit will retain a measurement until manually reset or will automatically recycle after displaying the measurement for a selected time.

BREVITY—Identify by IEN-2672 if you write the maker

MUFFLER . . Exhaust silencer for natural gas engines to 2,500 hp.

Source: BURGESS-MANNING CO.
747-51 Park Ave., Libertyville, Ill.



Inlet is at A and outlet is at B in this new Series-SDL Exhaust Snubber. The small connection at C is for water supply to an internal nozzle known as the Fog-jet. It sprays the water to extinguish any sparks entering the housing to become potential cause of internal explosions. The muffler will operate without the nozzle. A drain is required when it is employed.

Installation is in vertical position on a suitable foundation. Flanges are 125-lb. standard. Diameters of housing range from 24 to 72 in. with overall height at 91 to 234 inches. Weight is 460 to 7,275 pounds. Vertical position of the inlet flange can be specified within certain limits.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN-2673 if you write the maker

GEROTOR hydraulic MOTORS

a rotary power source with unique advantages

GEROTOR Hydraulic Motors can be stalled under load without damage, operated safely in explosive and corrosive atmospheres, installed in confined spaces. Low rotational inertia. Two models with plain, base or flange mounting—for direct coupling, belt, chain or gear drive. Sizes up to 8.7 h.p. Write for Catalog G-108.

GEROTOR hydraulic pumps & motors
GEROTOR MAY CORPORATION, Baltimore 3, Md.

BREVITY—Identify by IEN-2674 if you write the maker

Varglas SILICONE

Electrical Insulating Tubing and Sleeving for wide temperature ranges . . .

Between 85° F below Zero and 500° F above Zero

Owes its amazing temperature range to a combination of *Varglas* and *Silicone*. Resists moisture and oil—flame resistant and self-extinguishing

Various NEMA colors where required. Pioneered by Varflex.

TEST VARGLAS SILICONE IN YOUR PLANT.

Write today for your free folder of working samples.

Varflex SALES CO., INC.
306 N. Jay St.
Rome, N. Y.

NEW SLEEVING AND TUBING LINE

Low cost VARFLO for applications that do not have to allow for high operating temperature. Won't fray — takes rough handling without loss of dielectric — won't support combustion (made with Fiberglas braid). Samples and prices on request.

BREVITY—Identify by IEN-2675 if you write the maker

CAPCO DOCK COVERS OFFER YEAR 'ROUND PROTECTION

Can be installed inside or outside of dock door . . . . models for various purposes.

SOLD AT A LOW COST

...and the cost is especially low because it pays for itself many times...saves time and money over many years.

- PREVENTS ACCIDENTS
- ONE MAN CAN OPERATE
- FIREPROOF
- WATERPROOF
- DURABLE — LONG LIFE
- DEPENDABLE

BEAT THE BAD WEATHER

CAPCO Dock Covers completely enclose the space between car and building doorways, protecting loading and unloading during bad weather. Recommended by safety engineers. No more wet merchandise in the rain . . . no more interruption during winter. Here's your insurance against loss of either heat or refrigeration; you have practically the same as indoor loading.

CAPCO

Be sure to write for illustrated literature and prices.

622-24 PROSPECT AVENUE • KANSAS CITY 1, MISSOURI

BREVITY—Identify by IEN - 2677 if you write the maker

0 to 800 rpm in 8/10 second ...26 times per minute!

De Laval products at work!

Tough service? You bet! And this De Laval speed reducer takes it and likes it. This particular unit is driving a conveyor belt that automatically feeds and measures steel billets going into a shear. If your application is rough on reducers, let our power transmission engineers give you full details on our heavy duty worm and herringbone gear drives . . .

or write for Catalog GWBV-29

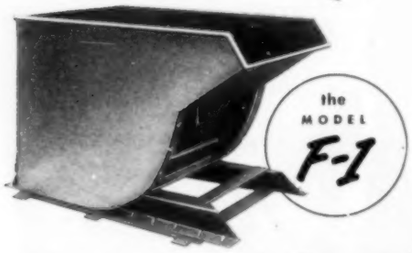
DE LAVAL STEAM TURBINE CO., TRENTON 2, N. J.

TURBINES • HELICAL GEARS • CENTRIFUGAL BLOWERS AND COMPRESSORS • CENTRIFUGAL PUMPS • WORM GEAR SPEED REDUCERS • IMO OIL PUMPS

DE LAVAL 50th Anniversary

BREVITY—Identify by IEN - 2678 if you write the maker

Here's the Answer to BULK MATERIAL HANDLING PROBLEMS



Phillips "Skid-Dump"

Bulk materials of all kinds are handled with maximum efficiency at minimum cost . . . with the Model F-1 "Skid-Dump". Used with pallet or fork lift truck, it automatically dumps and returns to original position. Smooth, rolled edges of 7/16" steel plate, welded undercarriage provide safety, long-life, strength and durability. Capacity—1 cu. yd.

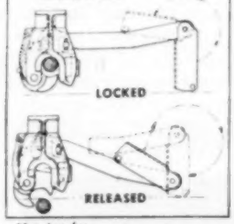
Write for Bulletin E-15

Heaviest materials easily handled with pallet truck.

Automatically dumps materials, returns and locks in original position.

New Safety Lock*

Provides maximum safety for operator—prevents accidental dumping of load.



Conveniently stacked, empty or full.

*Pat. App. for

MANUFACTURERS SINCE 1883 PHILLIPS PITTSBURGH, PA.

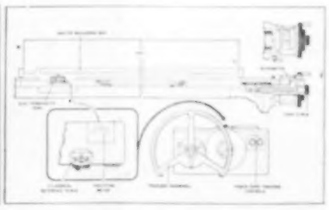
MATERIALS HANDLING EQUIPMENT

2300 JANE STREET • PITTSBURGH 3, PA.

BREVITY—Identify by IEN - 2680 if you write the maker

JIG BORING . . Precision machines, electric gaging, ball bearing spindles

Source: PRATT & WHITNEY
49 Charter Oak Blvd., West Hartford 1, Conn.



New design of the table-locating mechanism has been developed for the company's 4E jig-boring machine, previously described IEN-1739-50. The design employs the basic features of the Electrolimit gage, obtains basic 1-in. spacing from a master measuring bar by electrical means without making physical contact with the bar. Locating can start from either end or from the center of the work, depending on how a drawing is dimensioned, so the operator does not have to subtract any dimensions.

Two master bars are built into the machine at right angles with one another in permanently-sealed protected positions. One measures 60 in. in length on the under side of the table to position the table longitudinally. The other is 36 in. in length and is on the underside of the carriage for traverse positioning. Each bar has rectangular projections calibrated so the distance between the magnetic centers of adjacent projections is 1 in. within a tolerance of .00002 in. of accumulated error in the full length of each bar.

An electromagnetic head, positioned beneath each master bar, detects the exact magnetic center of each projection as the bar passes over the head and registers a zero reading on an indicating meter. The basic 1-in. spacing is further subdivided by positioning the electromagnetic head between any two projections on the master bar with a micrometer screw mounting a 4½-in. diameter barrel. Readings can be set direct to .0001 inch. A separate screw within the micrometer screw is used to "zero" the electromagnetic head under the nearest projection on the master bar when establishing an initial zero.

New design is also included in the spindles on the No. 2A and No. 3B machines for essentially permanent maintenance of accurate alignment by means of preloaded ball bearings. These bearings mount balls in aluminum cages in two rings that ride between hardened and ground steel liners and the hardened and ground spindle quill. Literature containing complete specifications is available on request.

BREVITY—Identify by IEN - 2681 if you write the maker

CONVEYING . . Coated fabric belt for incline movement to 45 deg.

Source: BONNER & BARNEWALL, INC.
199 Mercer St., New York 12, N. Y.

For operation up or down

Bonwall Upgo designates a new coated-fabric belt that develops sufficient friction between its surface coating and containers of various types to permit moving the containers up inclines as steep as 45 degrees. The belt is available in widths from 1 to 72 in. and in thickness from ⅛ to ¾ inch. Length is subject to specification. The coating will last from 2 to 4 years in normal duty. It can be replaced on the job.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 2682 if you write the maker

Amazing FLASH BOX OPENER

Opens Any Carton Quicker . . . Cleaner

Exclusive patented blade holder adjustable to varying thicknesses of carton covers.

THE ONLY CARTON OPENER THAT GIVES YOU ALL THESE ADVANTAGES:

Penetrates exactly under the outer cover thickness • Protects contents of carton • Cuts clearly to permit re-use • Prevents accidents • Saves time • Eliminates fatigue. *Already accepted by leading industries.*

Retail Price $1.75

FLASH BOX OPENER CO., Inc.
52 W. Houston St. • New York 12, N. Y.

BREVITY—Identify by IEN - 2683 if you write the maker

DO YOU KNOW?

—that a PILOT LIGHT CAN IMPROVE YOUR PRODUCT . . . add attraction—safety—service?

Ask DIALCO
— what lamp to use
— how to use it
— what it will do
— what it will cost

THIS MAY BE THE ONE

Designed for low cost NE-51 Neon

• Built-in Resistor • Patented
• U/L Listed • Rugged

Catalogue Number 521308 — 997 for 110 or 220 volts.

SAMPLES for design purpose NO CHARGE

NEW! Write for the "HANDBOOK OF PILOT LIGHTS."

Write us on your design problems.

Foremost Manufacturer of Pilot Lights

The DIAL LIGHT COMPANY of AMERICA

900 BROADWAY, NEW YORK 3, N. Y.

BREVITY—Identify by IEN - 2684 if you write the maker

GOT A small METAL-MELTING PROBLEM? *Here is an efficient economical answer!*

15 lb. capacity, Pot Tilting Electric Furnace melts any metal quickly, easily

A versatile small furnace for laboratory, pilot plant and small production. Engineered for economy. Designed for easy, practical use. Pot can be used as crucible or tilted to pour directly into molds. Roof lifts and swings for easy loading. Complete with controls. Literature on request.

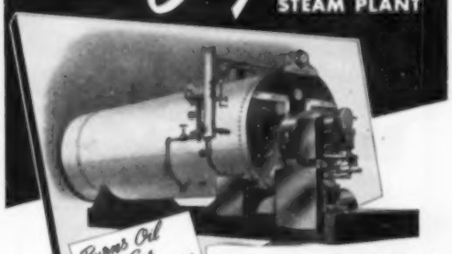
WRITE FOR DETAILS

DETROIT ELECTRIC FURNACE DIVISION
KUHLMAN ELECTRIC COMPANY
1050 26th St. • BAY CITY, MICHIGAN

Foreign Representatives: In BRAZIL—Equipamentos Industrias "Eiso" Ltd., Sao Paulo; CHILE, ARGENTINA, PERU and VENEZUELA: M. Castelli Inc., 150 Broadway, New York 7, N. Y.; MEXICO: Casco, S. de R. L. Atenas 32, Despacho 14, Mexico City, D. F.

BREVITY—Identify by IEN - 2685 if you write the maker

HERE'S YOUR Complete STEAM PLANT



Burns Oil or Gas or Both!

A complete steam plant backed by undivided responsibility • Shipped completely assembled • More than 80% thermal efficiency guaranteed • 4-pass design provides 5 sq. ft. of heating surface per b.h.p. • Built-in induced draft eliminates need of expensive chimney • Simple installation • Clean, quiet operation • Heavy-duty construction assures long-lived dependability • 17 sizes from 20 to 500 b.h.p. for pressures up to 250 p.s.i. or for hot water heating.

For complete details write for catalog 317.

Superior STEAM GENERATORS

SUPERIOR COMBUSTION INDUSTRIES, Inc.
Factory: Emmaus, Pa.
Executive Offices: Times Building, Times Square, New York 18, N. Y.

BREVITY—Identify by IEN - 2686 if you write the maker

BREVITY—Identify by IEN - 2687 if you write the maker

LOW HEAD ROOM HOIST

As an example, for existing structures with low head room, or for reducing costs of new construction by permitting lower ceilings, this low head room trolley hoist may solve the problem. Fast service available on these and other types, in sizes from 1½ to 24 tons. Write for complete catalog.

CHESTER HOIST DIVISION
The National Screw & Mfg. Company
Lisbon, Ohio

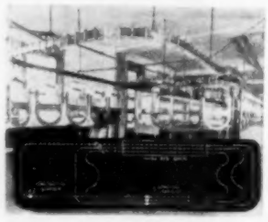
IEN-1

BREVITY—Identify by IEN - 2688 if you write the maker

BREVITY—Identify by IEN - 2689 if you write the maker

CONVEYING . . Overhead chain design rides bar steel rail for light work

Source: LIGHTWEIGHT CONVEYOR CO.
18688-92 Lauder Ave., Detroit 35, Mich.



C-shaped hangers equipped with flanged wheels top and bottom are connected at intervals by a lightweight chain and are mounted on a bar-steel track. Support rods secured on the inner face of the track suspend it from overhead. Load-carrying hooks are suspended from certain of the hangers depending upon the application.

Champion Lightweight is the designation. Sections range from 2 to 10 ft. in length. Weight is about 3 lb. per foot. The track can be laid out in parallel lines located 1⅜ in. or more apart. Horizontal and vertical curves can be included to make up simple or complex loops.

BREVITY—Identify by IEN - 2690 if you write the maker

FILTERING . . Woven saran fabric for acid and alkali filtering uses

Source: CHICOPEE MFG. CORP.
38-42 Worth St., New York 13, N. Y.

Sample available upon request

New application for the company's Lumite woven saran fabric and screen is in filtering equipment of various types. The material will not rust, rot or corrode. It will not support growth of fungus or mildew. It is unaffected by acids and most alkalis with the exception of concentrated ammonium hydroxide. It is completely impervious to common solvents, moisture, oils and greases.

Filter fabrics, particularly suited for the service, are the company's Nos. 342, 349 and 598. Weights range from .69 to 1.54 lbs. per square yard. Widths are 38 to 54 inches.

BREVITY—Identify by IEN - 2691 if you write the maker

PAINTING . . Portable electric unit to spray enamel, varnish, lacquer

Source: CAMPBELL-HAUSFELD CO.
900-920 Moore St., Harrison, Ohio

Model 50 Pressure Maid is a new design in the company's lines of portable spray-painting equipment. The new unit assembles a motor-driven compressor with an extension cord and plug to connect to a 110 volt outlet, a 15-ft. length of air hose and a container-equipped spray gun. In addition to paints, the gun will handle other fluids such as insecticides, disinfectants. List price of the new compressor unit is a little under $50.

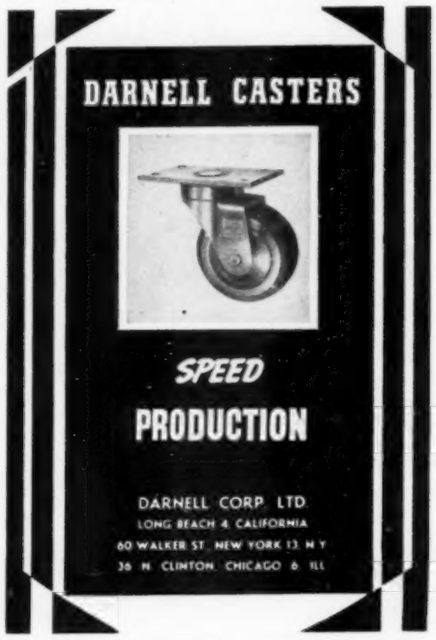
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2692 if you write the maker

Output of machined parts is speeded up without sacrifice of accuracy with a Super-Spacer. This indexing fixture allows rigid control of the machining operation, yet saves expensive setup time on long or short runs. Send for Bulletin S-101.

HARTFORD Special
THE HARTFORD SPECIAL MACHINERY CO.
HARTFORD 12, CONN.

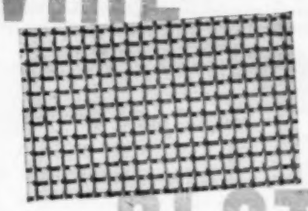
BREVITY—Identify by IEN - 2693 if you write the maker



BREVITY—Identify by IEN - 2694 if you write the maker

BREVITY—Identify by IEN - 2696 if you write the maker

WIRE CLOTH



tailored to your needs

Whatever your special requirements may be in wire cloth, you can count on Cal-Wic for the right weave, mesh and weight to meet your job demands. Cal-Wic Industrial Screens are also supplied in various metals and alloys to resist corrosion, abrasion and high temperatures.

Next time you order wire cloth take advantage of our 90 years' experience. Write for illustrated, descriptive catalog.

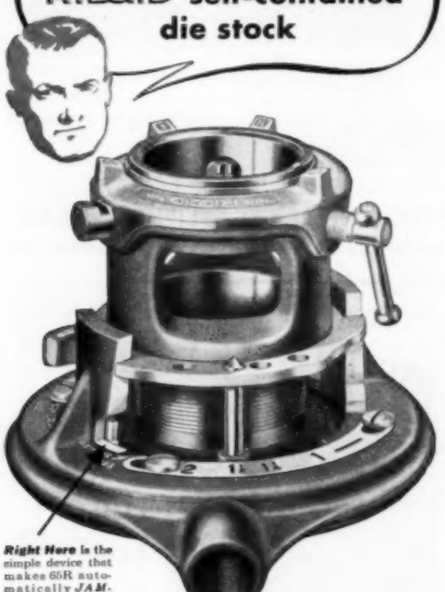
CAL-WIC INDUSTRIAL SCREENS CF&I

IN THE EAST—WICKWIRE SPENCER STEEL DIVISION • Clinton, Massachusetts
IN THE WEST—THE COLORADO FUEL & IRON CORP. • Denver 2, Colorado
ON THE PACIFIC COAST—THE CALIFORNIA WIRE CLOTH CORP., Oakland 6, Cal.

BREVITY—Identify by IEN - 2697 if you write the maker

You can't jam the new RIDGID 65R

Really streamlined pipe threading with this RIDGID self-contained die stock



Right Here is the simple device that makes 65R automatically *JAM-PROOF*.

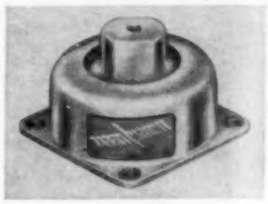
● You don't have to watch it—lead screw can't jam on workholder. New jam-proof drive plate automatically kicks out driving ratchet pawl when standard length thread is cut. Your recent model 65R easily converted—just buy new drive plate, put in place of old plate. Perfect threads on 1" to 2" pipe with one set of 4 high-speed steel dies—sets to pipe size in 10 seconds, mistake-proof self-centering workholder sets instantly! Buy the new jam-proof RIDGID 65R at your Supply House.

RIDGID
Work-Saver Pipe Tools
THE RIDGE TOOL CO. • ELYRIA, OHIO

BREVITY—Identify by IEN - 2699 if you write the maker

ISOLATING . . Vibration insulator designed to mount light mechanisms

Source: BARRY CORP.
179-P Sidney St., Cambridge 39, Mass.



All-Metl designates new design in the company's line in which a resilient pad made of knitted wire is combined with a metal spring as compared to the Type-770 unit previously described IEN-3048-49 with its combination of spring and rubber. The assembly is on a base measuring 2⅜ by 2⅜ inches. Height under minimum rated load is a little over 1¼ inches. The design meets Specification JAN-C-172A.

BREVITY—Identify by IEN - 2700 if you write the maker

CORROSION PROOFING . . Plastic, to coat metal drums handling chemicals

Source: GATES ENGINEERING CO.
P. O. Box 1711-A, Wilmington 99, Del.

Five gallon pails
55 gallon drums

Gaco Drum Lining is a new vinyl plastic supplied in liquid form for brush or spray application. The liquid dries in about 15 min. at 250 deg. F. to form a flexible abrasion-resistant lining that will not crack, chip or peel off. It protects the metal in the drum against corrosion and the packaged product against contamination. The final coating is 2 to 4 mils in thickness. Coverage is 400 sq. ft. per gallon per mil of thickness.

The material requires no special conditions for storing. It is thinned as required with a liquid supplied by the company for this purpose. The coating will flex if a drum is dropped and dented. It retains elasticity over considerable periods of time. Its smooth, clean, hard surface can be cleaned without difficulty.

BREVITY—Identify by IEN - 2701 if you write the maker

WASH ROOMS . . Toilet flush pedal is adjustable for any installation

Source: APPROVED PRODUCTS CO.
205 E. 42nd St., Room 1400, New York 17, N. Y.

New design in the flush-pedal assembly, previously described IEN-1150-50, mounts the pivot point on the wall instead of the floor. It connects to the flush-valve lever as before, also includes a spring in its telescoped connecting rod so the valve is protected against excess operating pressure. Parts are chromium-plated brass. Spring is stainless steel.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2702 if you write the maker

FOR QUICK, PERMANENT INSTALLATIONS—ORDER FLASH-STONE INDUSTRIAL

FLOORS

Materials only or completely laid by highly skilled Flash-Stone crews and supervision.

INSTALLED

Up to 25,000 sq. ft. per day with a minimum dislocation of production.

Manufacturers of specialized floorings to meet all industrial demands.

EMERY—COMPOSITION—MASTIC

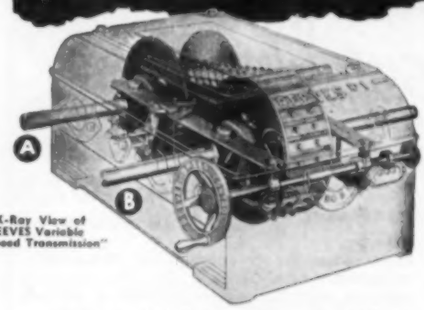
No matter what your production or traffic demands, we can supply a floor to meet your need.

Write today for complete information

FLASH-STONE COMPANY, INC.
ERIE AND PULASKI AVES., PHILA. 40, PA.

BREVITY—Identify by IEN - 2703 if you write the maker

REEVES Provides the Right Speed for Every Operation



"X-Ray View of REEVES Variable Speed Transmission"

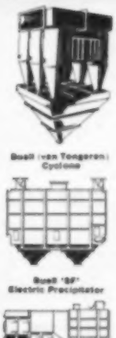
REEVES Variable Speed Transmission provides exactly the right speed for every job, every operator, under every changing condition . . . assures instant, accurate, infinite speed adjustability for faster processing with absolute precision . . . a wider work range for your equipment. Unit employs the proved REEVES principle of a V-belt driving between two pairs of cone-faced discs moving laterally on parallel shafts. As one shaft (A) receives power at a constant speed, the other shaft (B) transmits power to the driven machine at speeds anywhere above and below that of constant speed shaft, depending on diameter of V-belt contact against each set of discs. Send for Catalog IN-1a-3N describing REEVES Variable Speed Drives and their application to your driven machines.

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

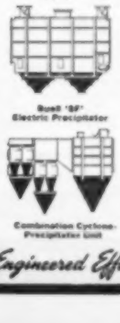
BREVITY—Identify by IEN - 2704 if you write the maker

BREVITY—Identify by IEN - 2705 if you write the maker

buell KNOWS DUST RECOVERY



Buell (van Tongeren) Cyclone



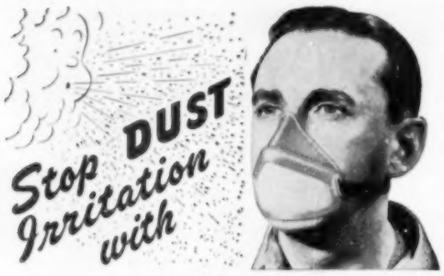
Buell "SF" Electric Precipitator

Combination Cyclone-Precipitator Unit

WHENEVER industrial engineers discuss valuable dust recovery, Buell is the big name mentioned. For Buell offers knowledge and capabilities in dust recovery second to none. Only Buell Precipitator recovers ultra-fine dust with "Stedi-flow" dust fall—continuous cycle rapping that means constant peak efficiency. Buell large diameter cyclones do not plug, require next to no maintenance. Complete details on both types of equipment are available. Buell Engineering Co., Suite 5050, 70 Pine St., New York 5, N. Y.

buell
Engineered Efficiency in **Dust Recovery**

BREVITY—Identify by IEN - 2706 if you write the maker



new sensational **FLEX-A-FOAM — FILTER MASK —**

Easier to breathe through and talk through than an ordinary handkerchief . . yet filters non-toxic nuisance dusts as small as 1/25000 of an inch!

- Extremely light in weight — only 1 ounce complete.
- Self-adjusting to every face size.
- Simple in design with only 4 interlocking parts.

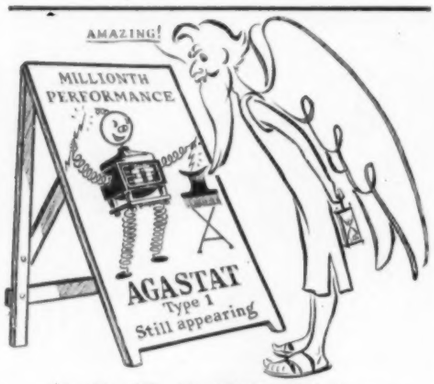
SAMPLE $1.50 POST PAID

Dust protection your workers will welcome and WEAR!

Write TODAY for descriptive circular

THE GOGGLE PARTS COMPANY
1468-70 W. 9th St. • Cleveland 13, Ohio

BREVITY—Identify by IEN - 2707 if you write the maker



AGASTAT TYPE 1

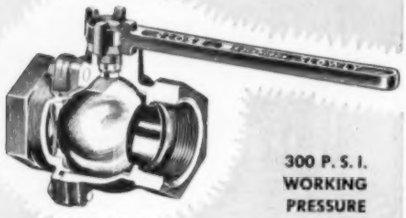
TIME DELAY STARTS WHEN COIL IS ENERGIZED. For continuous duty for both AC and DC service. Small, compact, well-designed. Literature on request.

AGA AIRPORT LIGHTING · AGA SUPERCHARGE REFLECTORS · AGA MARINE SIGNALING EQUIPMENT · AGA AGASTAT RELAYS

AMERICAN GAS ACCUMULATOR COMPANY
1027 NEWARK AVENUE • ELIZABETH 3, N. J.

BREVITY—Identify by IEN - 2708 if you write the maker

OUT-PERFORMS THEM ALL!



300 P. S. I. WORKING PRESSURE

ROCKWOOD Ball VALVES

have already made, in various types of industries, an outstanding record for longer, dependable, efficient performance.

The full round flow, leak proof service, quick opening and closing and no maintenance features make Rockwood Ball Valves your best valve buy on the market. These remarkable engineering features will give efficient and economical operations thru years of everyday rugged use. Together, they help increase your profits and reduce your maintenance cost. Available in all pipe sizes from ½" to 4".

Write for illustrated folder V-4.

ROCKWOOD SPRINKLER CO.
40 HARLOW STREET WORCESTER 5, MASS.

BREVITY—Identify by IEN - 2709 if you write the maker

GENERATOR . . Synchronous design in 60 and 400 cycle frequency ratings

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Three designs for 60-cycle operation on single or three-phase circuits and one to supply 400-cycle output, also in single and three-phase design, are included in this new line of Tri-Clad high-speed synchronous generators. The basic 60-cycle design is an externally-regulated unit to operate with a standard voltage regulator in the exciter field circuit. Ratings are from 2 kw. single phase to 50 kw. three phase on 60-cycle ac.

Modifications of this unit provide self regulation to 12 per cent on 80 per cent power factor on three-phase loads. The unit employs a saturated magnetic circuit and an overhung exciter. Ratings are 1 kw. on single phase, 10 kw. on three phase both 60-cycle ac.

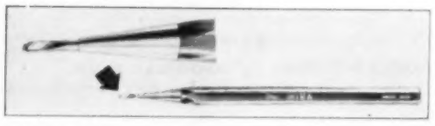
The third of the 60-cycle assemblies employs the basic 60-cycle generator with an overhung amplidyne exciter and a static voltage regulator in which the regulation is plus or minus 2 per cent at rated 80 per cent power factor. This assembly includes a small snap switch to provide taps for adjustment to plus 5 per cent, zero or minus 5 per cent variation from rated voltage. The generator is available from 2 kw. on single phase through 15 kw. on three phase.

The 40 cycle unit is a 14-pole assembly, available for frequency-changer application with a 3,500-rpm. motor. It is regularly supplied in ratings between 2 kw. on single phase through 40 kw. on three phase at 3,428 rpm.

BREVITY—Identify by IEN - 2710 if you write the maker

DRAFTING . . Flat-lead pencil draws uniform width line, no sharpening

Source: EVENLINE PRODUCTS
P. O. Box 212-A, Endicott, N. Y.



Mira trade names a new draftsman's pencil in which a flat lead measuring a little under 1/16 in. front to back by either .012 or .018 in. in width is enclosed and supported in a sliding metal sleeve in the metal pencil nose. The sleeve with the lead inside it is advanced in 1/8 in. steps by turning the pencil housing with reference to the nose so the lead is flush with the end of the sleeve.

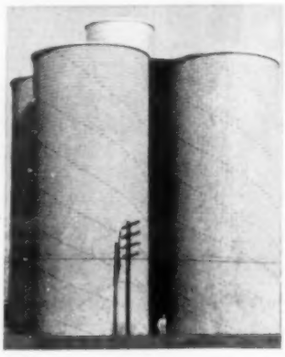
The pencil is employed in usual manner, the sleeve retracting as the lead wears down until the 1/8 in. has been consumed and forward movement is again required. Thus no part of the lead is exposed so it can be broken. When a lead length has been used up another is put in its place. The leads themselves are about 1¼ in. in length.

Four grades include HB, H, 2H, and 4H. Overall pencil length is 5½ inches. List price of the pencil is $3.50 and for each box of 12 leads is 25 cents.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 2711 if you write the maker

MICHIGAN PATENTED WAXSTONE STORAGE BINS



WEATHERPROOF
FIREPROOF
RODENT PROOF

FOR STORING
- SAND
- GRAVEL
- COAL
- GRAIN
- STONE
- SAWDUST
- GROUND CLAY
- RESINS

and OTHER BULK STORAGE MATERIALS

Made of vibrated, wet cast concrete with a smooth-as-glass interior surface that repels moisture, allows even settling, prevents air pockets. Strong, sturdy, built for permanency. Erected by our experienced crews. Contracts accepted will be filled promptly.

MICHIGAN SILO CO. (Industrial Division)
MASSILLON, OHIO • WHITE MARSH, MD.

BREVITY—Identify by IEN - 2712 if you write the maker

The "MASTER" Line OF MATERIALS HANDLING EQUIPMENT

The Most Complete Line of Materials Handling Equipment on Wheels

Buy the type of machine that fits your job.

Write TODAY for one or more of these new catalogs . . .

(24) Master JackLift Electric Trucks and JackStacker Electric Trucks.
(25) SpaceMaster Electric Fork Trucks.
(26) Master JackLift Trucks, Hydraulic and Mechanical Handlift Trucks, WeldMaster Skid Platforms.
(27) SpaceMaster Gas Fork Trucks.
(28) PowerMaster Stackers, Lifters, Handy Hoisters, Portable Cranes.
(29) FloorMaster Trucks.
(30) ToteMaster Gas Trucks.
(31) LoadMaster Racks for Pallet, Platform, Barrel, Drum, Bin, Unit Loads.

The "MASTER" Line

LEWIS-SHEPARD PRODUCTS INC.
142 Walnut Street, Watertown 72, Massachusetts
Midwest Plant: Crawfordsville, Ind.
Sales & Service in Principal Cities

BREVITY—Identify by IEN - 2713 if you write the maker

FOR $97.50 YOU CAN TEST THREE-DIMENSIONAL LAYOUT USING OUR SAMPLE KIT

The Kit contains 209 models on ¼-in. scale and a 12 by 18-in. Lucite layout board. There are machine tools, work benches, shop trucks, conveyors, pallets loaded and empty, tote boxes, cabinets, barrels, shelving, vises, desks, drinking fountains, toilets, telephones, typewriters, workers, both male and female.

"VISUAL" PLANNING EQUIPMENT CO., Inc.
Pennsylvania Ave. & River Oakmont, Pa.

BREVITY—Identify by IEN - 2714 if you write the maker

NEW! ISLAND PALLET DOLLIES

HANDLE WITH EASE

cut Loading Time in half

TAKE over where fork trucks leave off . . . at the Truck or freightcar door. Island Pallet Dollies have staggered bottom rollers to eliminate trouble from floor racks. Built to handle *your* pallets. All parts are standard equipment. Write for Bulletin RTD-1A. Dept. IE-3.

ISLAND EQUIPMENT CORP.
27-01 Bridge Plaza North
Long Island City 1, N. Y.

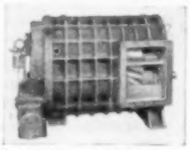
SEE OUR EXHIBIT AT THE MATERIAL HANDLING SHOW, BOOTH No. 235

BREVITY—Identify by IEN - 2715 if you write the maker

The
STANDARDAIRE BLOWER
Precision Built
AXIAL FLOW–POSITIVE DISPLACEMENT

Investigate important operating FEATURES

- HIGH EFFICIENCY
- LOW NOISE LEVEL
- ADIABATIC COMPRESSION
- HIGH SPEED and COMPACTNESS
- RELIABILITY
- ADAPTABILITY
- CLEAN AIR DELIVERY
- DIRECT DRIVE



For complete information, write for publication No. 90. THE STANDARD STOKER COMPANY, INC. Dept. E-21, 370 Lexington Ave., NEW YORK 17, N. Y.

Standard Stoker

NEW YORK • CHICAGO • ERIE • MONTREAL

BREVITY—Identify by IEN - 2716 if you write the maker

to measure *tension, traction or weight*

do it accurately with

DILLON DYNAMOMETERS!

COST IS NEGLIGIBLE

Rugged, compact, accurate; DILLON DYNAMOMETERS are simple and easy to handle and read.

From simple weighing to intricate torque tests, the DILLON DYNAMOMETER is doing the job with the same unfailing accuracy, versatility and rugged dependability which has made it a "by-word" in industry throughout the world. Your own plant becomes your testing laboratory with a DILLON DYNAMOMETER.

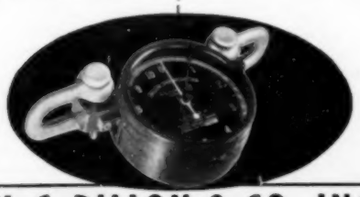
Built to take years of hard, daily use, the DILLON will pay for itself many times over.

Light: 8 lbs. 4 ozs. (5" dial model.)

Compact: 8¼" long, 6¼" high, 3" thick.

Accurate: Calibrated in Certified Laboratory Testing Machine.

The DILLON DYNAMOMETER is made in 9 different capacities: 0-500 lbs. up to 0-50,000 lbs. All have max. hand, shackles, safety glass crystal. There are thousands in use today by leading companies all over the world. Write for profusely illustrated Bulletin D-1.



W. C. DILLON & CO., INC.

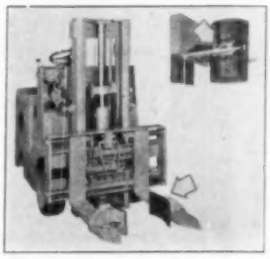
Precision Instruments for Precision Testing

1421-K SOUTH CIRCLE AVENUE • FOREST PARK, ILLINOIS

BREVITY—Identify by IEN - 2718 if you write the maker

TRUCK . . Fork shoe attachment to grip and handle cylindrical loads

Source: BAKER-RAULANG CO.
1248-52 W. 80th St., Cleveland 2, Ohio



Lateral movement, by hydraulic pressure for the forks on the company's fork-lift truck, is employed to move a pair of rubber-faced pivoted shoes in and out to grip cylindrical loads as shown in the illustration. The forks are adjustable between 32 and 19 in. inside their facings. This adjustment is supplemented by the hydraulic movement to grip a load or release it. The shoes are designed to slip on and pin into position on the truck forks for quick placement or removal.

The hydraulic mechanism includes a pressure regulator valve and accumulator to keep the pressure constant for handling steel drums, steel or wooden barrels, cardboard drums or other cylindrical loads without crushing them.

BREVITY—Identify by IEN - 2719 if you write the maker

WELDING . . AC. arc machine, transformer type, has 200 amp. rating

Source: AIR REDUCTION SALES CO.
1656 Lincoln Bldg., New York 17, N. Y.

Silicon insulation protects operation

Hot start control with a sealed gas-filled time-delay magnetic switch features the operation of this new Model MCX transformer-type welding machine. It employs insulated tapered-plug connectors and hand-crank adjustment for overall setting between 30 and 250 amperes in three intermediate current ranges. Electrodes measuring $\frac{1}{16}$ to $\frac{5}{32}$-in. can be employed. Overall housing dimensions are 12 by 17 by 23 inches. Nominal rating of 200 amp. is based on 50 per cent duty cycle.

BREVITY—Identify by IEN - 2720 if you write the maker

DRYING . . Electric oven takes twelve 10 by 17 in. X-ray films

Source: GENERAL ELECTRIC X-RAY CORP.
4853-57 Electric Ave., Milwaukee 14, Wis.

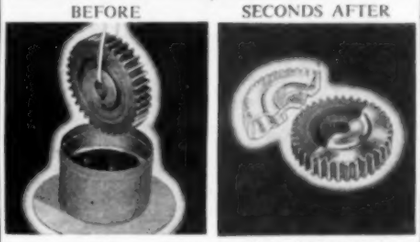
Electric element rated at 500 watts supplies the heat for this new film-drying oven. The unit is made of bonderized steel with gray finish and measures about 22½ by 19⅜ by 31 inches. Drying time ranges from 25 min. at 20 per cent relative humidity to 55 min. at 80 per cent. Two motor-driven fans circulate the heated air. Aridair is the trade name of the new oven.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2721 if you write the maker

HOT MELT PLASTIC COATINGS
for GEARS • TOOLS • PRECISION PARTS

BEFORE SECONDS AFTER



Dip Coated • Protected

DIP-PAK Protect vital, expensive tools, gears, and machined parts during storage and shipping with Fidelity's durable, transparent plastic coatings. Merely melt coating briquette, dip parts, cool. Lasts indefinitely. Tough; abrasive, moisture, rust resistant. To remove, slit, peel. Re-melt, re-use coating. Economical, practical, rapid. Protect parts; save money.

Write for Bulletins and Free Samples
Fidelity Chemical Products Corp.
470 Frelinghuysen Avenue, Newark 5, N. J.

BREVITY—Identify by IEN - 2722 if you write the maker

NEW SLIDE CHART
gives you information on

- BENDING RADII
- COIL DIAMETERS

for Stainless Tubing and Pipe from $\frac{3}{8}$" to 5" O.D.

Just write a note on your company letterhead and we will send your copy of this useful Carpenter Stainless Tubing Slide Chart

THE CARPENTER STEEL COMPANY
Alloy Tube Division Union, New Jersey

BREVITY—Identify by IEN - 2723 if you write the maker

Kester Solder

Kester Flux-Core Solders are made only from newly mined grade A tin and virgin lead. Fluxes are chemically and scientifically correct.

Eliminates Rejects

Rejects are eliminated when the correct solder for the job is used. Kester makes over 100,000 different types and sizes of Flux-Core Solder.

Faster

Using Kester "Speed" Solders will increase the output of your assembly lines.

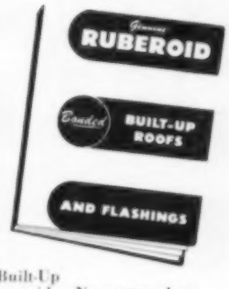
KESTER SOLDER COMPANY
4201 Wrightwood Avenue
Chicago 39, Ill.
Newark, N. J. Brantford, Can.

KESTER SOLDER

SEND FOR FREE MANUAL: "SOLDER AND SOLDERING TECHNIQUE"

BREVITY—Identify by IEN - 2724 if you write the maker

THE RIGHT ROOF EVERY TIME!



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Executive Offices: 500 Fifth Avenue, New York 18, N. Y.
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BREVITY—Identify by IEN - 2725 if you write the maker

PILLOW BLOCK BALANCING WAYS

Built in 1,000 2,000 5,000 10,000 20,000 Capacities

Especially suited for large diameter work, as a sub-base can be made of proper height to give necessary clearance for work. Anderson Pillow Block Balancing Ways are precision built with chilled iron discs which rotate with minimum friction on sensitve special bearings. Many manufacturers have endorsed them for efficient, static balancing.

ROCKFORD Anderson BROS. MFG. CO. ILLINOIS

Write for Bulletin No. 3-35

ANDERSON BROS. MFG. CO., Rockford, Ill.

Balancing Ways, Roto Checkers, Hand and Power Scrapers, Spotters, Hand and Power Hydraulic Straightening Presses.

BREVITY—Identify by IEN - 2726 if you write the maker

Cut glove costs 60%-65% and solved lost-time problem

CASE NO. 147

Problem: High injury rate and glove replacement expense due to tearing of heavy unlined rubber gloves, which exposed workers' hands to plating acids and sharp metal edges.
Study: 9 months' comparative test of various type coated-fabric gloves.
Solution: Redmont 14" gauntlets, of NEOX (specially reinforced neoprene) over fabric base, gave maximum protection from snagging and biggest cost saving. (Cost only half as much as gloves previously used and gave much longer service.)

Reduce costs, improve safety and increase production with the correct gloves for your operation

Free Test Offer: Send brief description (on business letterhead) of operation, materials handled, temperature conditions. Without cost we will supply samples of type glove we recommend, plus helpful test data. Address

Edmont Mfg Co., 518, Orange St. Coshocton, Ohio

World's largest maker of coated industrial gloves—
NEOX, natural rubber and plastic

Edmont COATED FABRIC **GLOVES**

BREVITY—Identify by IEN - 2727 if you write the maker

LOOK AT THESE SAVINGS! 53%...74%

OF NOBLE METAL THERMOCOUPLE COST with ENGELHARD RECLAIMING PROCESS

ON ONE 30" long platinum thermocouple, the Engelhard Reclaiming Process saved 53% as compared to the cost of a new unit. On another, the saving was 74%. These are typical examples of how Engelhard Reclaiming—including application of scrap value of old noble metal thermoelements against cost—can s-t-r-e-t-c-h your equipment dollar. What's more, Engelhard restores old thermoelements to like-new condition . . . *in just 48 hours*, if necessary.

ENGELHARD also manufactures a line of wide-range thermocouples and accessories to meet your *specific* conditions of atmosphere and temperature. For complete information on either Repairs and Reclaiming or New Couples, fill out coupon below and mail today.

MAIL COUPON

Please send me:
( ) Data on Engelhard Reclaiming Process
( ) Free copy of Engelhard Bulletin 350-D

NAME _____

ADDRESS _____

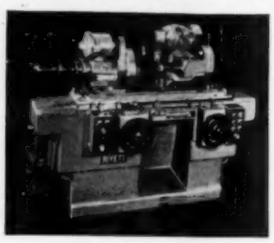
H-3 CE-111

CHARLES ENGELHARD, INC.
850 PASSAIC AVENUE, EAST NEWARK, N. J.

BREVITY—Identify by IEN - 2728 if you write the maker

GRINDING . . Universal machine, swivels from internal to external

Source: RIVETT LATHE & GRINDER INC.
20-24 Riverview Road, Brighton 35, Mass.



The operator can work in standing or seated position at the front of this new machine to handle the grinding-wheel feed control at his right and the table-traverse controls at his left. He can swivel the double-spindle wheel head to present an internal spindle for speeds to 35,000 rpm. and an external spindle operating at 1,800 and 2,100 rpm. to carry a 12 in. by 1½ in. wheel. Work mounts in a head with variable-speed drive in a range between 100 and 600 rpm. as selected at a dial. The work can be held with collets, step chucks, jaw chucks, plates, fixtures or it can be mounted on live or dead centers.

General work range includes hole grinding from ⅛ to 9-in. in diameter and to 6 in. in depth with external grinding to 12 in. in diameter and to 18 in. in length. Straight, taper, two-angle, face and shoulder surfaces can be ground.

Fine hand infeed is graduated to .00005 in. to compensate for wheel wear without moving the finish size stop. A micrometer wheel-trueing device is employed for duplicate hole sizings. Hydraulic table traverse is adjustable between ¾ and 24 inches. Traverse rate is 3 to 400 in. per minute. There is dwell adjustment at either or both ends of the table stroke and automatic infeed at either or both ends. A coolant tank and pump are separately mounted.

Both wheel spindles are prelubricated and sealed for their service life. Automatic lubrication applies at the machine bearings with a separate installation for the table ways. The machine occupies a floor space 84 by 58 inches.

BREVITY—Identify by IEN - 2729 if you write the maker

THREADING . . Tripod mounted drive takes ½ to 2 in. hand pipe die stocks

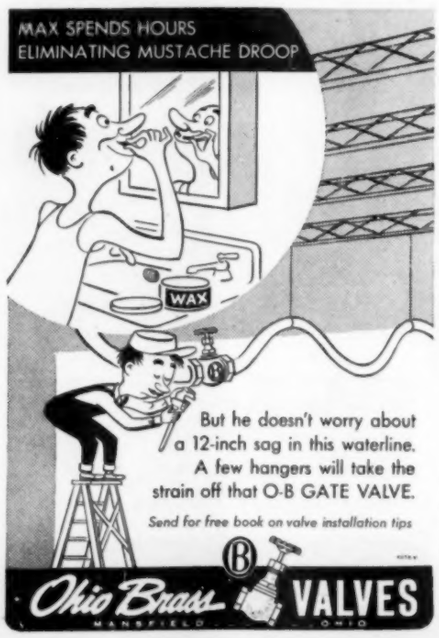
Source: VERMETTE MACHINE CO.
409-13 Gostlin St., Hammond, Ind.

Three pipe legs shown facing down and forward in the illustration are spread out and positioned on the floor to support the motor-driven head of this new pipe-stock drive to take pipe horizontally. The pan shown in the worker's right hand attaches between two of the legs to catch oil and chips from the die stock which positions against horizontal hardened stop pins on the face of the head.

The 2-hp. universal 110-volt motor beneath the head is gear connected to a chuck that rotates the pipe to cut threads on its end. Speed is variable at 18 to 28 rpm. The machine will cut a pipe nipple at 5 in. in minimum length without a die pilot and nipple chuck. Weight is 75 pounds. List price is about $200.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2730 if you write the maker



BREVITY—Identify by IEN - 2731 if you write the maker

WIRE MESH

Maybe it all *does* look pretty much the same at first glance. But when a firm has been making wire mesh for 70 years man and boy, there's bound to be a little more to it than meets the eye — a little more know-how in engineering and weaving, a little more quality in the product, a little more service and satisfaction for the user.

JELLIFF WIRE MESH is woven in all ductile metals
JELLIFF WIRE MESH is woven in all commercial weaves
JELLIFF WIRE MESH is woven in widths up to 72 inches
JELLIFF WIRE MESH is economical. Every foot runs true to the specifications.

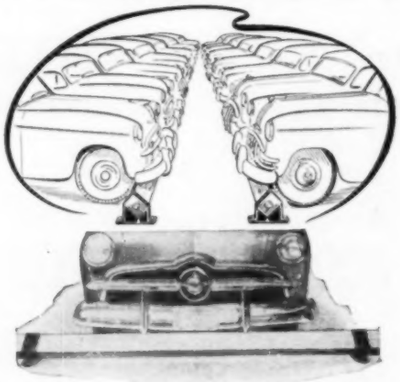
★ ★ ★ ★

JELLIFF WIRE MESH is a quality product and has been for 70 years. You can depend on it.

Write today for full details about JELLIFF WIRE MESH, JELLIFF WIRE MESH PRODUCTS, and JELLIFF'S CONSULTATION SERVICE on wire-mesh engineering. Address Department 12.

THE C. O. **JELLIFF** MFG. CORP.
DIPPING BASKETS · LEKTROMESH · RESISTANCE WIRE
WIRE MESH PARTS · WIRE CLOTH · STRAINERS · FILTERS
SOUTHPORT CONNECTICUT

BREVITY—Identify by IEN - 2732 if you write the maker



SALIENT FEATURES OF HAR-BAR BARRIERS

1. High enough to stop your car.
2. Low enough to clear your bumper guards.
3. Barrier is above ground—no drainage problem.
4. Barrier is above ground—no rotting of wood.
5. Automatically spaces your cars.
6. Follows contour of your ground.
7. Easily installed—just line up and drive the anchor pins.
8. Easily moved—just pull the anchor pins. 100% reusable.
9. Easy to clean under.
10. Easy to maintain.
11. Installed on any kind of surface—black top, cement, macadam, gravel or cinders.
12. It really dresses up your parking lot.
13. You always stop against your tire—no shock.
14. Castings are non-rusting aluminum alloy.

Send us a plot plan of your parking lot—we do the engineering free.

Harris-Barrier, Inc. 5407 N. PENNSYLVANIA STREET INDIANAPOLIS 5 • INDIANA

BREVITY—Identify by IEN - 2733 if you write the maker

Immediate Delivery

Buy Direct from the Manufacturer and Save

Francis EST. 1880 **FACTORY-MILL & WAREHOUSE TRUCKS**

Cutting Handling Costs since 1880

Complete Line — For every use. Standard sizes 27" x 48" and 30" x 54" in stock ready for immediate shipment.

Need more good trucks quick? Buy direct from the manufacturer and save — time AND money. Francis heavy duty, economical trucks feature strong iron work — hardwood frame—rigid construction. All carefully machine fitted. Steel rims or rubber tires.

WRITE TODAY for catalog and prices

Manufactured by **HOOSIER FENCE CO. Inc.**
DEPT. IEN 1701 E. 38th St., Indianapolis, Ind

BREVITY—Identify by IEN - 2734 if you write the maker

Only 20 Seconds for a Complete Test!

The NEW DWYER TRANSPARENT

CO_2 INDICATOR

The Dwyer #900 is a really new CO_2 Indicator that assures greater efficiency and accuracy in operation. It actually takes but 20 seconds to make a complete test—and you can make over 500 tests per refill. Body is fabricated from a transparent solid "lucite" bar, making it practically unbreakable. Open-faced dial is easy to read. Furnished with a circular efficiency slide rule. Available in heavy metal case with provision for stack thermometer, draft gage and smoke tester.

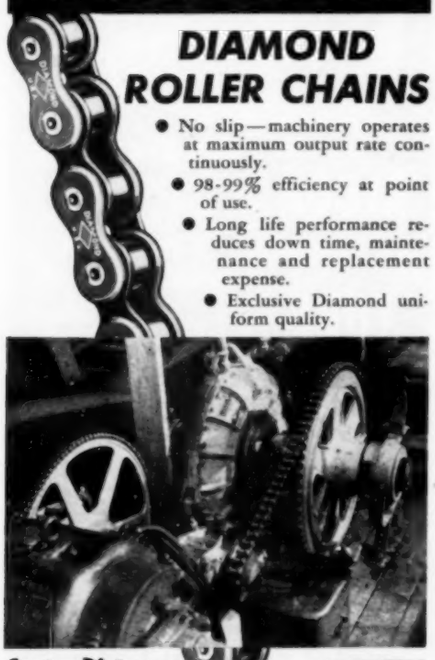
Also manufacturers of Draft Gages, Smoke Detectors, Manometers, Pitot Tubes, etc

F. W. Dwyer Mfg. Co.

307 South Western Avenue Chicago 12, Ill.

BREVITY—Identify by IEN - 2735 if you write the maker

NO WASTED POWER WITH



DIAMOND ROLLER CHAINS

- No slip—machinery operates at maximum output rate continuously.
- 98-99% efficiency at point of use.
- Long life performance reduces down time, maintenance and replacement expense.
- Exclusive Diamond uniform quality.

Center Distances Can Be Long Or Very Short

Shaft to shaft operation can be accomplished without slip regardless of center distances. The wide range of types and sizes of Stock Sprockets meet most all Roller Chain Drive requirements.

A copy of Catalog 709 is yours for the asking.

DIAMOND CHAIN CO., Inc.
Dept. 465, 402 Kentucky Avenue,
Indianapolis 7, Indiana

Offices and Distributors in All Principal Cities

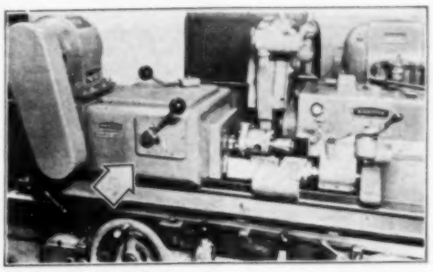
Refer to the classified section of your local telephone directory under the heading CHAINS or CHAINS-ROLLER

DIAMOND ROLLER CHAINS

BREVITY—Identify by IEN - 2737 if you write the maker

GRINDING . . Attachment for pistons to grind compound relief on diameter

Source: NORTON CO.
36 New Bond St., Worcester 6, Mass.



New design of the company's relief-grinding attachment for gasoline-engine pistons mounts the head end of the piston in a dog or holder that is moved in and out with reference to the grinding wheel as in grinding the piston skirt to a uniform oval. At the same time the skirt end of the piston is centered in a spherical bearing on a special footstock center.

The bearing thus becomes a pivot about which the piston revolves and oscillates according to the motion of the rocking bar as imparted by the master cam. In and out motion at the footstock pivot is zero. The amount of piston relief that will be ground at any point along the piston length is proportional to the distance from the footstock pivot.

The new design can be specified for the 4 by 7-in. attachment on 6-in. grinding machines as supplied by the company. It is available also on the 6 by 8-in. attachment for 10-in. machines.

BREVITY—Identify by IEN - 2738 if you write the maker

VALVE . . Plug type globe design particularly suited for throttling use

Source: FAIRBANKS CO.
395 Lafayette St., New York 3, N. Y.

Figure 0525 is a new 150-lb. bronze globe valve with stainless-steel plug-type disc and seat, both heat treated to 500 Brinell. The valve is made in ¼ to 2-in. sizes and is designed particularly for throttling service as well as for full flow and shutoff. It can be reground. Replacement seats and discs are available in matched sets. The stainless-steel will not wire draw, corrode or suffer damage from solids in the fluid being handled.

Construction includes a two-piece union bonnet with radial seat and shoulder for full opening seal to permit repacking under line pressure. The stem is fitted with Acme threads. The packing box contains molded asbestos packing held in place by a nut and gland. The handwheel is ventilated malleable iron. The valve is an addition to the line which previously included 200 and 300-lb. classes based on steam pressure. Face-to-face dimension is about 2⅛ to 5⅝ inches. List price is $5.40 to $35 in the stated range of sizes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 2739 if you write the maker

For Every Industrial Need!

VACO

BREAK-PROOF
SHOCK-PROOF
Screw Drivers

FL 34 FLASHLIGHT DRIVER

Fire Safe Handles
Vaco S/B handles are slo-burning to reduce fire hazards. You'll like their "feel" as well as safety feature.

Large or small, square shank or round, extra long or stubby, there IS a Vaco screw driver for every screw used in your plant. Whether it's a regular, Phillips, Reed and Prince, screw holding, clutch head or Allen bit, Vaco makes 'em all. To find out how Vaco can serve you, write for:

FREE 30-Page Catalog

A gold mine of information on all types of drivers, both screw and nut. Full of tables to fit the screw driver to the screw. Fully illustrated with drawings of most screw heads, photographs of drivers and wide assortment of kits and specialty items. Order your copy, *today!*

VACO PRODUCTS CO. 317 E. Ontario St., Chicago 11
In Canada: Vaco Lynn Products Co., Ltd.
1212 Notre Dame St. W., Montreal 3, Quebec

MORE THAN 250 TYPES AND SIZES

BREVITY—Identify by IEN - 2740 if you write the maker

Operate at Full Voltage with ALLIS-CHALMERS Dry-Type TRANSFORMERS

MAXIMUM EFFICIENCY is obtained when motors and other equipment are operated at rated voltage. Allis-Chalmers dry-type transformers installed close to the load provide full voltage for efficient motor operation, bright, flicker-free lights, and full heating of thermal equipment. Long expensive runs of secondary copper are avoided, and distribution losses are minimized.

Transformers are easy to mount. Install them on walls, platforms, posts or directly on machines. No expensive fire-proof vaults are needed. Available in a wide range of sizes.

Write Allis-Chalmers, Milwaukee 1, Wisconsin, for bulletin 61B6382A. A-3255

ALLIS-CHALMERS

BREVITY—Identify by IEN - 2741 if you write the maker

QUESTION: HOW CAN WE PREVENT MOTOR BURNOUTS?

ANSWER: SPECIFY AND USE MOTORS WITH

KLIXON PROTECTORS

Yes, it's simple and easy to prevent motor burnout headaches caused by overloading and overheating — all you have to do is specify that your motor manufacturer supplies you with *Klixon-Protected* Motors.

Built in by the motor manufacturer, the Klixon Protector stands constant guard, always ready to prevent the motor from burning out by cutting the power "off" should it become dangerously overheated. Temporary overloads do not cause nuisance cut-outs.

Remember, all motors do not come protected . . . so to be sure that your motors are equipped with Klixon Protectors, specify on your purchase order "motors with Klixon Protectors." The additional cost for the Klixon Protector is exceptionally low . . . pays for itself many times over by minimizing motor burnouts, reducing repairs and replacements.

KLIXON

SPENCER THERMOSTAT
Division of Metals & Controls Corp.
203 FOREST ST., ATTLEBORO, MASS.

BREVITY—Identify by IEN - 2742 if you write the maker

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COMPLETE EXPERT INDUSTRIAL SERVICE

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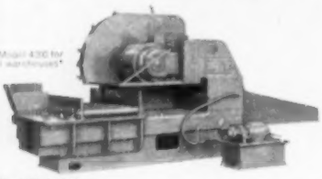
BREVITY—Identify by IEN - 2743 if you write the maker



PROOF that you can do it faster with KLING high speed friction saws

What is friction sawing?
It is a proven means of using mechanical heat to cut steel. The weakened steel is removed by each succeeding section of the cooled saw blade—with no apparent wear on the blade.

Fastest, all-around cut-off machine in the shop.
No set-up changes required to cut any sequence of structural shapes. No distortion. Takes the place of several separate shears or slow speed saws. Cuts alloy steels, too, in record time. Blade life is measured in thousands of cuts.

FREE friction sawing information. *Write today for free booklet on Friction Sawing. Learn how you can profitably apply Friction, Sawing in your plant*

How long would it take you to cut these pieces?	Cut it with a Kling in ↑ . .
24" 100 lb. I Beam	28 seconds
15" 55 lb. Channel	15 seconds
8" x 8" x 34.3 lb. H Beam	10 seconds
100 lb. A.R.A. Rail	9 seconds
6½" x 6½" x 13.8 lb. Tee	5 seconds
8" x 8" x ¾" Angle	11 seconds
3" Square	10 seconds
4" Round	15 seconds
6" O.D. Tube, ½" Wall	11 seconds

↑ Approximate Times

*What's your requirement? There's a size to fit your specific needs—large or small.

5391 RRR

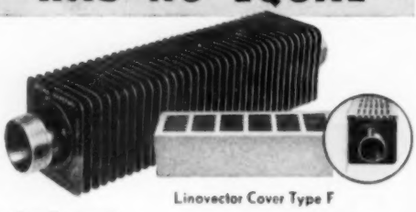
KLING BROS. ENGINEERING WORKS
1306 N. Kostner Ave., Chicago 51, Ill.

Kling ...an investment in speed!

MANUFACTURERS OF: Combination Shear, Punch & Copers • Double Angle Shears • Rotary Shears • Punches • Plate Bending Rolls

BREVITY—Identify by IEN - 2744 if you write the maker

VULCAN HAS NO EQUAL



Linovector Cover Type F

- For Ease of Installation
- Balanced Heating Comfort

Linovector Cover Type S

Made in *copper* or *steel* for schools, public buildings, hospitals, churches, industrial buildings.

EASY TO INSTALL — LIGHT IN WEIGHT

Send For Illustrated Bulletins

THE VULCAN RADIATOR CO.
26 FRANCIS AVE. HARTFORD 6, CONN.

BREVITY—Identify by IEN - 2745 if you write the maker

CLEVELAND Top Quality High Carbon Heat Treated Cap Screws

Unusually dependable for strength, accurate fit and clean-running threads, Cleveland High Carbon Cap Screws are the most all-around satisfactory fastener you can use. Maximum strength, excellent qualities, good appearance. It pays you to use Cleveland Fasteners.

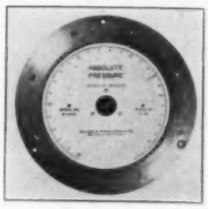
CLEVELAND Top Quality FASTENERS

THE CLEVELAND CAP SCREW COMPANY
2917 EAST 79TH STREET • CLEVELAND 4, OHIO
Warehouses: Chicago, Philadelphia and New York
Ask your Jobber for Cleveland Fasteners

BREVITY—Identify by IEN - 2746 if you write the maker

GAGE . . Aneroid barometer for laboratories has a 6 inch dial

Source: WALLACE & TIERNAN PRODUCTS INC.
9-13 Mill St., Belleville 9, N. J.



Air tight housing made of anodized aluminum encloses the operating mechanism of this new Type FA-160181 barometer. Atmospheric pressure is admitted to the housing interior by a pressure inlet to deflect a pressure-sensitive capsule. Movement of the capsule is transmitted to a gear sector through a push rod and flexure pivot. Rotation of the sector is geared to rotate the pointer which travels over the 6-in. dial. A spring takes up any backlash. The dial can be calibrated in inches or millimeters of mercury, or both can be shown. Two designs provide for wall or panel mounting.

Range is 660 to 800-mm. of mercury with .5-mm. graduations, 26 to 31.5 in. of mercury with .2-in. graduations, or the dual scale showing both. Scale length is 16 inches. Sensitivity is one part in 500. Overall diameter is 8½ inches. Weight of the new instrument is 3 pounds.

BREVITY—Identify by IEN - 2747 if you write the maker

HOSE . . Accordion design 1½ in., stretches 6 to 14½ feet

Source: PULLMAN SALES CORP.
581 Boylston St., Room 820, Boston 16, Mass.

Highly flexible and lightweight

New hose measures 6-ft. in length in relaxed position and has been designed for application on vacuum cleaning equipment. It extends on slight pull lengthwise to a maximum of 14½ ft. so it is not necessary to move the vacuum machine or to employ a long hose in order to cover a considerable area.

BREVITY—Identify by IEN - 2748 if you write the maker

SIGNALING . . Lights and horn signal normal and abnormal conditions

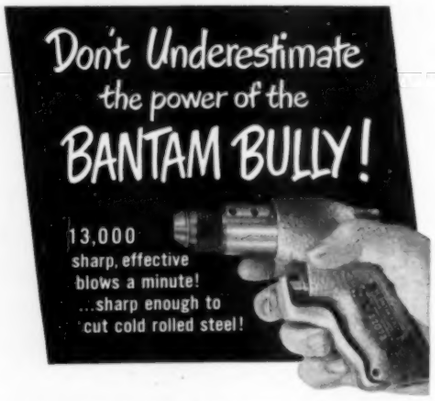
Source: PANALARM PRODUCTS INC.
7216-20 N. Clark St., Chicago 26, Ill.

Plug-in design of the individual signaling units in the company's cabinet-mounting multiple assembly has been added to the rigid construction previously described IEN-5621-50. Each unit is removable and replaceable, locks in place by a stud and nut from the rear of the cabinet. Any number of units, each with its printed or engraved designation plate, can be specified. Units are hermetically sealed and equipped with two electric lamps as well as for connection to a common audible signal circuit.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2749 if you write the maker

Don't Underestimate the power of the BANTAM BULLY!



The amazing Bantam Bully air hammer gives you real power in an easy-to-use size. It is 5" long and weighs only 22 ozs. Exclusive metering trigger regulates the power from a feather touch to a powerful blow. Full speed and power attained on less than 6½ C.F.M. of air.

Use it for scaling, chiseling, peening, tamping, cutting, routing, grooving, caulking, channeling, chipping, driving, drilling, marking, and hundreds of other applications.

Write for full details on the Bantam Bully, Big Bully, Bully blow gun and the Bully Fulflo air filter.

Superior Pneumatic division of **Herbrand Tools**
4758 WARREN ROAD, GARFIELD HEIGHTS, OHIO

BREVITY—Identify by IEN - 2750 if you write the maker

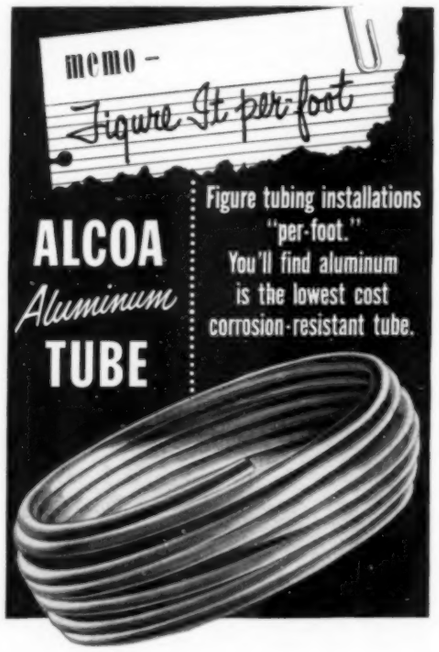
Here's News of Importance to All Quantity Users of Springs

IF you are a user of large quantities of precision springs of any type we have a proposition that may very well result in a substantial reduction in costs for you. All we ask is the opportunity to have our engineers go over your spring requirements. Our experience indicates that the application of our "know-how" and modern facilities can often result in lower costs through improved manufacturing methods. Let us show you what we can do for you. Write today.

ACCURATE SPRING MFG. CO.
3807 W. LAKE ST. • CHICAGO 24, ILL.
Cost Conscious Quality Since 1930

Accurate Springs — Springs • Wire Forms • Stampings

BREVITY—Identify by IEN - 2751 if you write the maker



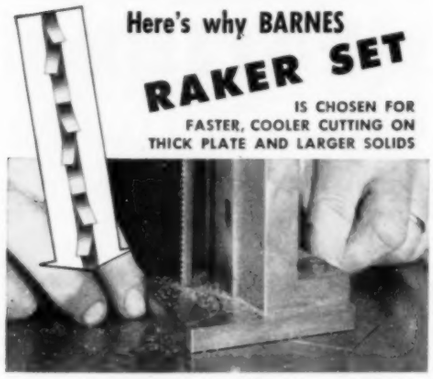
Plan to specify Alcoa Aluminum Tube for instrument, air and lubrication lines. It's an excellent performer—corrosion-resistant, light weight and strong. And the initial cost is 40% less than other corrosion-resistant tube. Look under "aluminum" in your classified telephone directory—call your Alcoa Distributor.

Free Alcoa's new book "Instrument Lines of Alcoa Aluminum". It's illustrated and crammed with facts. Write today! Address ALUMINUM COMPANY OF AMERICA, 836C Gulf Bldg., Pittsburgh 19, Pennsylvania.

Due to rearmament, aluminum is not available for unrestricted industrial use. However, when tubing is used, extensive engineering and planning are required and this advertisement is intended as an aid to your planning.

ALCOA Coiled Tube ALUMINUM

BREVITY—Identify by IEN - 2753 if you write the maker



Here's why BARNES RAKER SET IS CHOSEN FOR FASTER, COOLER CUTTING ON THICK PLATE AND LARGER SOLIDS

Raker Set, because of its design, assures a fast cutting rate. Each tooth cuts a full chip, thus less heat is generated. Raker Set retains saw kerf width, combines strength with more efficient chip clearance where most cutting is on larger solids or thick plate.

See your Barnes Distributor for dependable saw blades and dependable technical advice.

BARNES ESTABLISHED 1919 **W. O. BARNES CO., INC.** 1297 TERMINAL AVE. • DETROIT 14, MICH.

BREVITY—Identify by IEN - 2754 if you write the maker

READABLE...INSTANTLY...

Weston

All-Metal **THERMOMETERS**

Seconds count when things go wrong . . . wherever temperatures are critical. And not even a split-second is lost in reading temperatures accurately, when the thermometers are WESTON. Their large, boldly marked faces are readable, even from a distance. And the rugged, all-metal construction of WESTON bi-metal thermometers assures dependable, trouble-free operation. Available in types, sizes and stem lengths for most industrial applications. Write for bulletin T-13. Weston Electrical Instrument Corporation, 603 Frelinghuysen Avenue, Newark 5, New Jersey . . . manufacturers of Weston and Tagliabue Instruments.

WESTON *Instruments*

BREVITY—Identify by IEN - 2756 if you write the maker

TUMBLING . . Motor driven barrel contains two 24 by 40 in. compartments

Source: GRAV-I-FLO CORP.
402 Norwood Ave., Sturgis, Mich.

Deburring, grinding, polishing operations are performed on ferrous and non-ferrous work pieces, employing the company's Super-Brite finishing chips and compounds in this new double-compartment barrel. It is enclosed in a metal housing provided with a guard at the front which stops operation by actuating a limit switch when it is lifted. The 5-hp. motor is equipped with a magnetic brake and is designed for operation on 220/440-volt, 60-cycle ac. Water and electrical connections are integral in the assembly.

Construction employs ½-in. steel plate for unlined design or ¼-in. plate with a rubber lining. Either one can be specified. The compartment doors have cam locks with manually released safety stops. Starting and stopping is controlled by a lever or, to specification, by a push-button switch. A motor-driven separator can be supplied to remove the chips from the finished work. Overall dimensions are 68 by 64 by 68 inches.

BREVITY—Identify by IEN - 2757 if you write the maker

MARKING . . Aluminum foil, adhesive backed, carries characters

Source: C & H SUPPLY CO.
Boeing Field, Dept. 10, Seattle, Wash.

Samples and data upon request

Metal-Cal trade names new aluminum-foil nameplate for self-adhering application on metal, porcelain, plastics, glass, wood or smooth painted surfaces. Letters and characters are permanent. Five colors are available in addition to plain aluminum. Initial development was for Boeing Airplane Company for permanent marking purposes.

BREVITY—Identify by IEN - 2758 if you write the maker

WHEEL . . Rubber tread aluminum with sealed roller bearing hub design

Source: AEROL CO.
2818-22 Ontario St., Burbank, Calif.

Sizes range from 6 to 20 in. in this new Airlite Seal aluminum wheel. It has been designed for use in foundries, metal and woodworking shops, mills, warehouses and in processing plants where there is a problem in excluding dust, dirt and other foreign matter from the wheel bearings. Each unit mounts a Zerk lubricant fitting to add required grease.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2759 if you write the maker

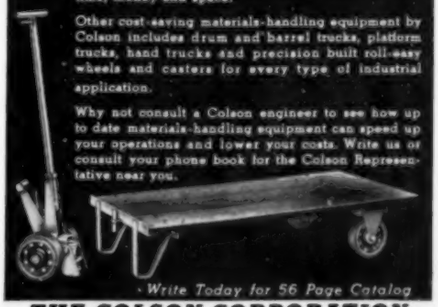
In Materials-Handling the Colson LIFT-JACK System

Lets 1 man do the work of 2

Through production, in and out of storage, on and off freight cars or trucks, Colson Lift-Jacks with wood or steel semi-live skids can easily double the efficiency of conventional hand trucks. You save time, money and space.

Other cost-saving materials-handling equipment by Colson includes drum and barrel trucks, platform trucks, hand trucks and precision built roll-easy wheels and casters for every type of industrial application.

Why not consult a Colson engineer to see how up to date materials-handling equipment can speed up your operations and lower your costs. Write us or consult your phone book for the Colson Representative near you.



Write Today for 56 Page Catalog

THE COLSON CORPORATION
ELYRIA, OHIO

CASTERS . . . . LIFT-JACK SYSTEMS . . . . INDUSTRIAL TRUCKS

BREVITY—Identify by IEN - 2760 if you write the maker

Drive out

FOUL AIR

Blow in

FRESH AIR

with Coppus Type A Ventilator

Assure greater safety, comfort for workers . . . get greater efficiency.

Drive out dangerous fumes, gases, stagnant or hot air from boilers, cable manholes, tanks, vats and other confined places. *Supply fresh air continuously.*

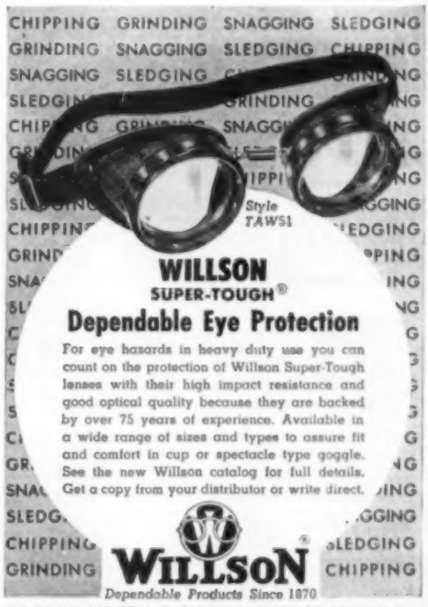
Send now for further information. Coppus Engineering Corporation, 143 Park Avenue, Worcester 2, Mass.

MANHOLES made safe for workers' entrance within minutes.

BOILER AND TANK INTERIORS cooled by Coppus. Fresh air supplied continuously.

ANOTHER **COPPUS** "BLUE RIBBON" PRODUCT

BREVITY—Identify by IEN - 2761 if you write the maker



WILLSON SUPER-TOUGH®

Dependable Eye Protection

For eye hazards in heavy duty use you can count on the protection of Willson Super-Tough lenses with their high impact resistance and good optical quality because they are backed by over 75 years of experience. Available in a wide range of sizes and types to assure fit and comfort in cup or spectacle type goggle. See the new Willson catalog for full details. Get a copy from your distributor or write direct.

WILLSON® *Dependable Products Since 1870*

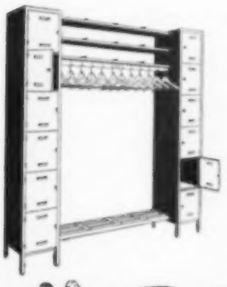
WILLSON PRODUCTS, INC., 217 WASHINGTON ST., READING, PA.

BREVITY—Identify by IEN - 2762 if you write the maker

VALET RACKS

Lockerette

KEEPS WRAPS "in press"



improves health and morale—lowers absenteeism

Wraps are exposed to air and light. Employees do not face the weather in damp wraps that have been crumpled in cack lockers—do not eat soggy lunches, soaked by wet hats or gloves. Each person has his own spaced coat hanger, ventilated hat shelf and 12" x 12" x 15" deep lock box for lunches, tools and personal effects. Lockerettes save space too . . . the No. 9-12 (illustrated) accommodates 12 people in 6 feet; the No. 9-18 (3-pedestal) accommodates 18 in 9 feet.

Write for Bulletin OL-5

VOGEL - PETERSON CO.
624 So. Michigan Ave., Chicago 5, Ill.

BREVITY—Identify by IEN - 2763 if you write the maker

Prints on Postcards • Shipping Tags • Labels

Boxes • Cartons • Packages

ALSO FORMS, BULLETINS, MENUS, LETTERS

MULTISTAMP STENCIL DUPLICATOR

MANUFACTURED ONLY BY THE MULTISTAMP CO., INC., NORFOLK, VA.

THE ORIGINAL HAND STAMP STENCIL DUPLICATOR

OVER 30 YEARS

- A "rubberless" stamp in one minute for 2c
- Type, write, draw, trace on low-cost stencil
- 1000 or more copies from 1 stencil . . . one inking
- Non-mechanical . . . made of non-corrosive metal
- Replaceable ink pads
- 8 Complete Outfits . . . $9.50 to $99.50

POPULAR No. 3—POSTCARD AND LARGE TAG SIZE

Durable case includes 12 stencils, ink, ink brush, stylus pen, writing board, type cleaner, correction varnish, illustrated instructions.

$19.50 f.o.b. factory COMPLETE

At Your Office or Shipping Room Supply Dealer

BREVITY—Identify by IEN - 2764 if you write the maker

They're RUGGED

KENNAMETAL PLANER TOOLS *permit* HEAVY DUTY *HIGH SPEED* PLANING

Kennametal planer tools take roughing cuts at high speeds (100-250 ft./min.) on any newer type planer having a tool lifter.

They remove metal at a faster rate, keep machine down time to a minimum, reduce tooling cost per piece, minimize grinding time and expense.

These tools are shock proof and thermal-strain-free. With them—for the first time—*all* the advantages of high-rate carbide machining can be obtained on any good, properly powered and adjusted planer.

Kennametal Inc. is the only manufacturer of these cost-cutting planer tools. Ask our district engineer to demonstrate.

Several Styles Available

Send for Catalog 49

KENNAMETAL Inc. Latrobe, Pa.

MANUFACTURERS OF SUPERIOR CEMENTED CARBIDES AND CUTTING TOOLS THAT INCREASE PRODUCTIVITY

BREVITY—Identify by IEN - 2765 if you write the maker

Economize on Cleaning Costs NOW!

In more and more plants, General Electric Heavy-duty Vacuum Cleaners are being used because they speed thorough cleaning of all areas.

These powerful cleaners provide efficient, economical dust control around machines, make gathering of small metal or other scrap easy. Wet pickup is also a feature. Write for particulars.

MAIL TODAY

GENERAL ELECTRIC COMPANY, Dept. 22-3525
1285 Boston Ave., Bridgeport 2, Conn.

Send me, without obligation, details on G-E Heavy-duty cleaning equipment.

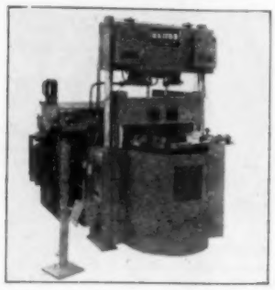
Name _____
Firm _____
Address _____
City _____ *State* _____

GENERAL ELECTRIC

BREVITY—Identify by IEN - 2766 if you write the maker

PLASTIC MOLDING . . Hydraulic press to mold rubber around metal inserts

Source: ELMES ENGINEERING DIVISION
1165 Tennessee Ave., Cincinnati 29, Ohio



Steel inserts around which rubber is to be molded are placed in an open die at the loading station of this new hydraulic transfer press. The table is then rotated through 120 deg. to bring upper and lower die halves together. The upper half is attached to a steam-heated plate carried by the die clamp and the two parts are secured together when cycle is started and the die clamp moves down.

Molding material placed in the two extrusion chambers is injected into the die cavities and is held under pressure until it cures, when the extrusion plungers move downward. They retract at the end of the curing interval and the die clamp opens. In the meantime the operator has placed inserts in the second set of lower dies so he is ready to rotate the table for the next injecting action.

The initial set of dies, with the molded parts, moves out to approach unloading position where the parts continue to cure until the set time is completed. Then an ejector ram removes them from the cavities. The table contains three stations for loading, molding and curing and is mounted on a steam plate to hold temperature when the dies are out of pressing position.

The press has semi-automatic timed-cycle controls, push-button operated with provision for inching on each of the movements. The two transfer rams rate 20 ton each. The die clamp rates 60 ton.

BREVITY—Identify by IEN - 2767 if you write the maker

MAGNET . . Welded steel design for lifting duty, 29 to 65 in. diameter

Source: DINGS MAGNETIC SEPARATOR CO.
4738-42 W. Electric Ave., Milwaukee 46, Wis.

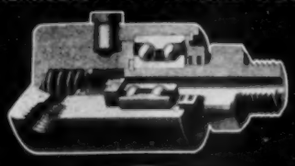
Rigid assembly, water-tight construction and design to absorb abuse in service are the chief characteristics of this new lifting magnet. Welding promotes strength and minimizes weight. A manganese coil shield covers the bottom between the pole shoes. Guard plates cover the power cable on top of the housing. Four-point chain suspension prevents swinging and tipping when picking up off-center loads to be lifted.

Five sizes measure 29 to 65 in. in diameter and weigh 1,250 to 9,100 pounds. Operating current is 9 to 59 amp. based on 50 per cent duty cycle. Generator rating to serve the coil is 2½ to 15 kv. Required headroom is 27 to 50 inches. Load capacity based on slabs is 13,000 to 65,000 pounds. It is 175 to 1,200 lb. based on steel turnings.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2768 if you write the maker

FAWICK ROTORSEAL PROVIDES TROUBLE-FREE TRANSMISSION OF AIR AND LIQUIDS



If your machine problem requires the transmission of air or liquids from stationary to rotating machine members, a FAWICK ROTORSEAL will provide the trouble-free, practical answer.

Precision-made ROTORSEALS are available in either single or multiple passage units, producing an absolute sealing of air, liquids, or gases under pressure. They are equally effective in vacuum applications. Thousands of installations have proved the high efficiency of FAWICK ROTORSEALS.

FAWICK AIRFLEX CO., INC.
9919 CLINTON ROAD • CLEVELAND 11, OHIO

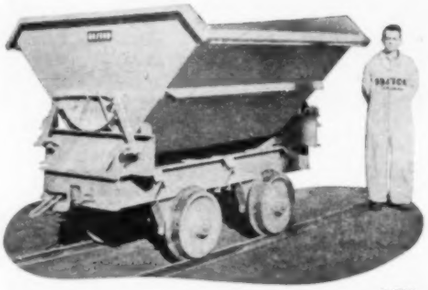
For complete information on a FAWICK ROTORSEAL to suit your specific application, write to the Home Office, Cleveland, Ohio.

FAWICK Airflex
INDUSTRIAL CLUTCHES AND BRAKES

BREVITY—Identify by IEN - 2769 if you write the maker

EASTON

a dependable design and construction service in industrial cars



A-1016

EASTON CAR & CONSTRUCTION CO. • EASTON, PA.
NEW YORK • PHILADELPHIA • PITTSBURGH

BREVITY—Identify by IEN - 2770 if you write the maker

New air-cushioned grinding wheel gives finer finish faster

Fits all flexible shaft tools, bench grinders and drills. Should be in every tool crib. $15—with drum, 5 abrasive bands, hand pump.

38 Factory Service Branches in U. S. and Canada with complete parts stocks serve thousands of dealers and millions of users.

Mall POWER TOOLS
Put POWER into MANPOWER
7782 C S. Chicago Avenue., Chicago 19, Ill.
Manufacturers of over 1000 Tools for A Million Jobs

BREVITY—Identify by IEN - 2771 if you write the maker

STOP . . . danger of costly derailments!

with the M&M RAIL CLAMP

Holds cars fast—will not slip

Highest degree of protection for employees working in and around cars. Can be put in position in minimum amount of time, no blocks, ties or shims necessary. Used in heavy industries throughout the country on loading platforms, cars on grade, on car ferries, sidings, traveling cranes, steam shovels and excavators. Made to fit any rail, worn or new. Order now.

Write for information and prices

SAFETY FIRST SUPPLY COMPANY
423 Magee Street, Pittsburgh 19, Pa.

BREVITY—Identify by IEN - 2772 if you write the maker

Fatigue, errors, scrap are minimized as ILG Rapid Air Change goes on the job! Experience proves a healthful, fume-free, fresh air atmosphere boosts production, improves morale. Efficient, economical, long-life ILG Self-Cooled Propeller Fans can be quickly installed in wall or window. Phone nearby Branch Office (consult classified directory), or send inquiry card.

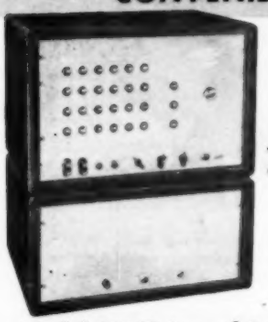
ILG ELECTRIC VENTILATING CO.
2812 North Crawford Ave., Chicago 41, Ill.

FREE! New 8-Page Bulletin No. S-311

ILG VENTILATION
for rapid air change

BREVITY—Identify by IEN - 2773 if you write the maker

NEW! FREQUENCY AND TIME MEASUREMENTS ACCURATELY... CONVENIENTLY



using $f\frac{n}{t}$

ANY FACTOR MAY BE MEASURED FOR FIXED VALUE OF THE OTHER

Model 801 Universal 6-in-One MEGACYCLE FREQUENCY-TIME COUNTER

by Potter

Now, the Potter Instrument Company offers all in one equipment, the features heretofore available only in separate counting systems. Two complete counting channels, a 100 kc crystal oscillator time base and unique gating circuits are combined to provide the new FREQUENCY-TIME COUNTER.

FREQUENCY MEASUREMENTS	0 to 1 mc range by counting cycles per pre-selected time or by measuring time per pre-selected count. Accuracy 0.001% minimum.
TIME INTERVAL MEASUREMENTS	0 to 10 seconds ± 10 micro-seconds.
FREQUENCY RATIO MEASUREMENTS	Ratio of two external frequencies can be measured.
SECONDARY FREQUENCY STANDARD	100 kc crystal oscillator with divided frequencies available at 10, 1 kc and 100, 10, 1 cps.
TOTALIZING COUNTER	Six decades, pulses 0 to 1 mc, sine wave 10 cps to 1 mc.
DIRECT RPM READING TACHOMETER	Through the use of an external 60 count per revolution photoelectric disc generator an accuracy of ± 1 rpm is obtained.

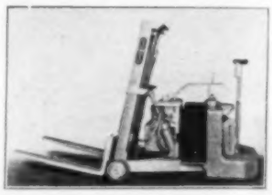
Please address inquiries to Dept. 75

POTTER INSTRUMENT COMPANY • INC.
115 CUTTER MILL RD., GREAT NECK, N. Y.

BREVITY—Identify by IEN - 2775 if you write the maker

TRUCK . . Power lift fork design with 18 volt drive for ramp operation

Source: MOTO-TRUC CO.
1955 E. 59th St., Cleveland 3, Ohio



Ratings are 1 and 1¼ ton on load centers to 24 in. in this new counterbalanced truck. Lift heights are 94 and 120 in. with corresponding collapsed mast heights of 72 and 83 inches. Approximate weight is 3000 pounds. Travel speed is 3 mph. and lift speed is 20 fpm. with a rated load.

Control centers at the steering lever where a roller handle is turned in the direction of operation to select first and second speeds. Brakes are applied with the handle in horizontal position, or released for spring return to vertical position, to hold the truck from any travel movement. In a field test the truck carried a 1¼-ton load up a 12 per cent ramp for 8 continuous hours without any difficulty.

BREVITY—Identify by IEN - 2776 if you write the maker

CHUCK . . Electro magnetic unit mounts on lathe spindle, 6¾ in. diameter

Source: CONTINENTAL ELECTRIC CO.
1232-36 S. Prairie Ave., Hawthorne, Calif.

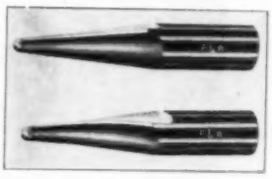
Two errors were made

We quoted 9 in. as the body diameter for the company's chuck, previously described IEN-593-51. We should have named 6¾ inches. We also are advised that current list price is $175, and not $125.

BREVITY—Identify by IEN - 2777 if you write the maker

MILLING . . Die sinking cutters, tapered flutes, ground ball nose ends

Source: PRATT & WHITNEY
49 Charter Oak Blvd., West Hartford 1, Conn.



No. 368 and No. 367 are new hardened and finished die-sinking cutters, respectively with straight and spiral flutes. They are carried in stock, are ready to use. The ball nose is finished round to cut to dead center so no preliminary hand grinding is required. Three shank diameters measure ½, ¾ and 1 inch. The lengths of cut measure 1½, 2 and 3 in., with overall lengths at 3½, 4½ and 5½ inches.

The smallest units measure ⅛ to ¼ in. at the small end for 1½ in. length of cut. They are ⅛ to 3/16 in. for a 2-in. cut and ¼ to ½ in. for a 3-in. cut. In each case the ball-nose radius is equal to ½ the diameter of the small end. Each is supplied regularly for a right-hand cut.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2778 if you write the maker

THE MATEER ELECTRIC FILLER HANDLES THEM ALL!

LIQUIDS • OILS • POWDERS • PASTES
COMBINED LIQUIDS AND SOLIDS
1/500 oz. to 2 Pounds
20 to 70 Per Minute
Up to 750° F.

SAVE TIME AND MONEY WITH THE MATEER ALL ELECTRIC FILLING HEAD

Totally enclosed, manual or automatic. Accuracy as close as ±½%. Synchronize this self contained filling head with existing production lines and processing systems.

Jacketed and electrically heated hoppers available for handling cold and hot materials up to 750° F.

Hot waxes, insulating compounds and asphalts handled without difficulty.

Send full information and samples of material to be tested. Write Dept. 106 for fully illustrated bulletin.

G. DIEHL MATEER & CO.
Lincoln Highway • Devon, Pa.

BREVITY—Identify by IEN - 2779 if you write the maker

Lower

PRODUCTION COSTS WITH *KRAUS* AUTOMATIC HOPPERS

Typical Tumble Hopper

USE THEM FOR...

1. Machining
2. Assembling
3. Packaging
4. Sorting

VERSATILITY. Basic hoppers can be tooled for a wide variety of pieces.

LARGE CAPACITY. Up to 2.4 cu. ft. on 32" tumble type. Eliminates frequent reloading and saves labor.

Send samples with delivery rate and orientation requirements to:

KRAUS DESIGN INC.
948 EXCHANGE ST. • ROCHESTER 8, N. Y.

BREVITY—Identify by IEN - 2780 if you write the maker

THREE DIAL SIZES
12 INCH
24 INCH
30 INCH

MODELS 500 TO 100,000 POUNDS CAPACITY

LOW HEAD ROOM

HYDRAULIC ACCURACY

HYDROSCALE

A rugged, compact crane scale that eliminates the need for weighing stations by checking the load when you lift to move it. Eliminates equipment tie-ups and lost man hours. Write for our catalog today.

SAVE TIME AND SPACE

HYDROWAY SCALES, INC.
20624 WEST 8 MILE ROAD P. O. Box 4754 • DETROIT 19 MICH

BREVITY—Identify by IEN - 2781 if you write the maker

for VER-Y S-L-O-W Stroboscopic Observation

IN many applications of the standard STROBOTAC®, the lower flashing rate of 600 per minute is entirely too fast for very slow-moving machinery like printing presses, envelope manufacturing machines, etc. The Type 631-BL STROBOTAC has an added slow-speed range of 60 to 1440 flashes per minute, selected by throwing a switch. The instrument has a range of 60 to 14,400 rpm. Dial calibration is accurate to 1% over the standard 600 to 14,400 range, with less accuracy on the lower range.

For complete data on the slow-speed Strobotac, as well as our entire line of Stroboscopic instruments, write for

EYES for INDUSTRY

GENERAL RADIO COMPANY Cambridge 39, Massachusetts
90 West Street NEW YORK 6 | 920 S. Michigan Ave. CHICAGO | 1000 N. Seward St. LOS ANGELES

BREVITY—Identify by IEN - 2782 if you write the maker

MINIATURE RELAYS FOR AVIATION'S TOUGHEST JOBS

These little hermetically-sealed d-c relays in either single or multipole types are specifically designed for aviation conditions involving high shock and vibration, elevated temperatures and high altitudes. A completely new magnet structure permits greatly reduced size with improved dependability. Three available types are for operation up to +85°C., +160°C. and +200°C. respectively, thus matching specific aviation service requirements. Write for Struthers-Dunn Data Bulletin 2410.

STRUTHERS-DUNN

STRUTHERS-DUNN, INC., 150 N. 13th St., Philadelphia 7, Pa.

5,348 RELAY TYPES

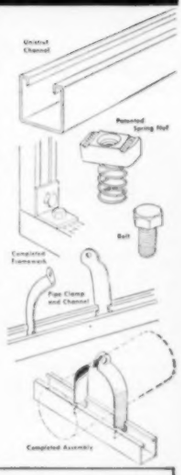
BALTIMORE • BOSTON • BUFFALO • CHARLOTTE • CHICAGO • CINCINNATI
CLEVELAND • DALLAS • DETROIT • KANSAS CITY • LOS ANGELES
MINNEAPOLIS • MONTREAL • NEW ORLEANS • NEW YORK • PITTSBURGH
ST. LOUIS • SAN FRANCISCO • SEATTLE • SYRACUSE • TORONTO

BREVITY—Identify by IEN - 2783 if you write the maker

RACKING CONDUIT *made Easy with* UNISTRUT

Cross sectional view of Unistrut-supported heavy conduit run in recent installation at American Sugar Refining Company's Chalmette, Louisiana plant. Note that Unistrut's adjustability makes possible later changes or additions.

Try Unistrut framing the next time you have a pipe or conduit racking job. It's easy to use, requires little detailing time, fast to erect, and is capable of supporting great weight. It's trim framework, neat in appearance, permits extreme accuracy of installation and adjustability to a fraction of an inch. Add framework, clamps, or hangers at any time, quickly, easily, *without disturbing existing runs!*



NO DRILLING
NO WELDING
100% ADJUSTABLE AND REUSABLE

Write for **FREE** *Construction Catalog*

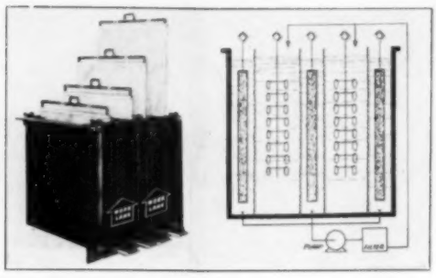
UNISTRUT PRODUCTS COMPANY
1013 W. Washington Blvd.,
Chicago 7, Ill., Dept. D3
Please send Free Catalog No. 500—Unistrut Applications in the Electrical and Mechanical Trades.

Name _____
Company _____
Address _____
City _____ Zone _____ State _____

BREVITY—Identify by IEN - 2785 if you write the maker

PLATING . . Conversion equipment for diaphragm plating in plain tanks

Source: AUTOMOTIVE RUBBER CO.
8603 Epworth Blvd., Detroit 4, Mich.



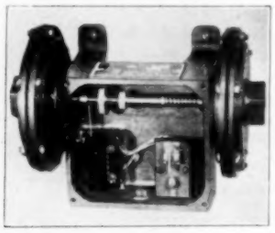
New equipment has been developed by the company for conversion of plain plating tanks to diaphragm plating in which anode and cathode areas are segregated by canvas duck screens. The converter sections can be built for tanks of any width, depth and length. The canvas duck sleeve screens ride on insulated frames that slide in insulated channels. Woven-wire guards, rubber insulated, protect the screens on the work or cathode sides. Hose or pipe can be lowered into the anode compartments to pump off the solution for filtering.

The anolyte is pumped off, filtered and returned to the cathode compartments free from insoluble metallic and organic matter which forms at the anode and normally deposits on the work. For space estimating, the center anode section occupies 8 to 9 in. and each side section takes 6 to 7 inches. Schematic arrangement is illustrated.

BREVITY—Identify by IEN - 2786 if you write the maker

SWITCH . . Diaphragm operated for control of differential pressures

Source: CORAL DESIGNS DIVISION
12-18 Astoria Blvd., Long Island City 2, N. Y.



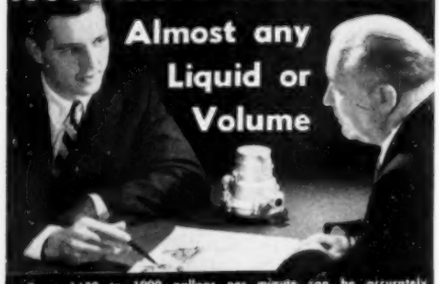
Micro switch, in single-pole double-throw design with 10-amp. 110-volt ac. rating, is operated by opposed neoprene diaphragms in this new Catalog 111-D sensitive control. One diaphragm is connected into the pressure side and the other into the vacuum side of a pressure condition to be controlled. The opposite faces of both diaphragms are open to atmosphere. The connecting shaft with its collars for the switch operation, is spring loaded for range adjustment.

Differential can be specified in four fixed amounts minimum at .2 in. and maximum at 2 in. of water. Minimum adjustment for range is 0 to 2 in. of pressure or vacuum. Maximum is 0 to 20 inches. Assembly is in an aluminum housing. It employs brass cadmium-plated machined parts. Dimensions are 8½ by 5 by 7 in. for ¼-in. pipe.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2787 if you write the maker

ACCURATE METERING

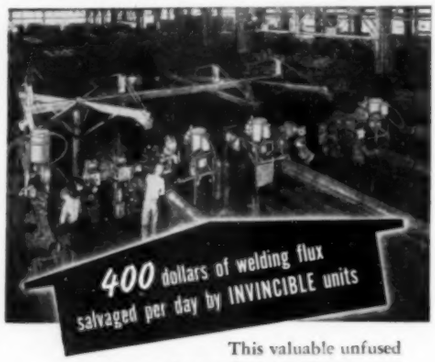


From 1/30 to 1000 gallons per minute can be accurately metered by performance-proven NIAGARA Meters. Nutating piston principle combines large capacity with slow-flow sensitivity. Sizes range from ½" to 6" diameter. There are meters for oils, chemicals, cold or hot water and many other liquids. Investigate them today by sending coupon for complete details.

Please send me information on the complete line of Niagara Meters.
Liquid _____
Flow g.p.m. _____ Temp. _____°F
Name _____
Company _____
Address _____

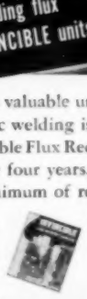
BUFFALO METER CO.
2929 MAIN STREET BUFFALO, N. Y.

BREVITY—Identify by IEN - 2788 if you write the maker



This valuable unfused flux from submerged arc welding is *automatically* salvaged by five Invincible Flux Recovery Units . . . In steady use for over four years, these Invincibles have required a minimum of repairs.

The complete line of Invincible Recovery Units offers the right size and type for every kind of submerged arc welding job.



WRITE FOR **FREE FOLDER** on Flux Recovery

INVINCIBLE VACUUM CLEANER MFG. CO.
DOVER, OHIO

BREVITY—Identify by IEN - 2789 if you write the maker

Design with AIR!

Pressure • Vacuum • Suction

Handle all these jobs!

Lifting—holding—chucking—sorting—cleaning—drying—cooling—separating—mixing—agitating—feeding—blowing—leak-testing—pressure-boosting, etc.

COUNTLESS jobs are done faster, simpler, less expensively by using pressure, vacuum or suction provided by Leiman Air Pumps. Air is the only reliable, trouble-free solution to many operations. Learn more about the great possibilities of designing with air. Leiman engineers offer over 60 years' experience with thousands of air applications. Outline your application for recommendation and suggestions. Write for data outlined below.

Your most efficient air source—

LEIMAN AIR PUMPS

Take up their own wear!

IF an air pump can do it—a Leiman Air Pump will do it best! Simple, compact design provides greater capacity, size for size . . . has fewer moving parts . . . provides a continuous flow of air . . . is extremely quiet in operation . . . uses no gaskets or packing . . . maintains leakless fitting for life . . . requires no storage tanks . . . needs little or no maintenance . Range of sizes for pressure up to 25 lbs. p.s.i. or vacuum up to 29". Specify Leiman Air Pumps on equipment you buy—install them in equipment you build. Get engineering data.

Exclusive Leiman hinged wing design permits wings to wear uniformly, maintaining full pressure or vacuum, after 15 and 20 years' steady service.*

WRITE FOR ENGINEERING DATA

•**16-PAGE CATALOG** showing construction, types, sizes, capacities, etc.

•**APPLICATION FOLDER.** Contains 60 "how-to-do-it" blueprints of actual applications. Will suggest many more.

LEIMAN BROS., Inc.
166 Christie St., Newark 5, N. J.
AIR PUMPS • AIR MOTORS • SAND BLASTS • DUST COLLECTORS

BREVITY—Identify by IEN - 2791 If you write the maker

Quimby the original SCREW PUMP and why they are still preferred:

- 100% Antifriction Bearing equipped
- Quadruplicate Non-Slip Screws
- Balanced Power, Pulseless Discharge
- Smooth Running and Quiet
- No Stuffing Box Trouble
- Direct-Connected to Drivers
- Ninety Types available
- Herringbone Driving Gears
- No Metallic Contact
- Positioning Bearing

Insist upon the original . . . now owned, manufactured, marketed, serviced and guaranteed by Warren . . . one of America's pioneers of the pump industry.

WARREN QUIMBY PUMPS

CENTRIFUGAL, RECIPROCATING, SCREW, ROTARY

WARREN PUMPS

WARREN STEAM PUMP COMPANY, INC. • 62 Bridges Ave. • Warren, Mass.

BREVITY—Identify by IEN - 2792 If you write the maker

AVAILABLE

FOR ORDNANCE PROCUREMENT ORDERS

A dependable source of Supply for Cast Brass Components and Machined Brass and Bronze Castings

- **HAYS** . . . one of the nation's largest producers of machined brass and bronze castings
- **FACILITIES**
  Pattern Department . . .
  Brass Foundries . . .
  Precision Machines . . .
  Capable of producing large quantity requirements
- **PERSONNEL**
  Design, tool, and production engineers . . . Expert craftsmen . . . with many years of service
- **QUALITY**
  Reputation that results from 80 years' experience in supplying the water and gas utilities, manufacturers in the appliance, industrial, and marine fields, and from producing material for the ARMY, NAVY, and AIR FORCE.

Submit your requirements with details, specifications, and delivery for prompt quotation.

AVAILABLE

MORE THAN 3500 CATALOGED PRODUCTS MANUFACTURED BY HAYS

Here's one of the specialized products designed and produced by HAYS . . . a six-unit manifold assembly for controlling the flow from a central source.

HAYS

HAYS MANUFACTURING COMPANY

General Offices, Machining, Fabricating and Assembly Plant

809 West 12th Street, ERIE, PA.

Foundries: Erie, Pa., and Albion, Pa.

BREVITY—Identify by IEN - 2794 If you write the maker

WOOD WORKING . . Routing cutter to trim laminated plastic table tops

Source: NORTH AMERICAN PRODUCTS CO.
3102 W. Cherry St., Milwaukee 8, Wis.

Bevel Trim Tool is a new routing cutter mounting carbide-tipped teeth above a ball-bearing guide roll to trim the overhang of plastic sheet that has been glued to plywood cores. The blades are ground to a 29-deg. angle and are set to produce a downward shear to prevent chipping the plastic surface. The cutter positions in a routing machine and is adjusted for desired depth of cut. The ball-bearing roll prevents marring the finished edging strip.

BREVITY—Identify by IEN - 2795 If you write the maker

CLEANING . . Steam spray machine employs electrically heated boiler

Source: LIVINGSTONE ENGINEERING CO.
102 Grove St., Worcester 5, Mass.

Steam cuts grease
cleans surfaces

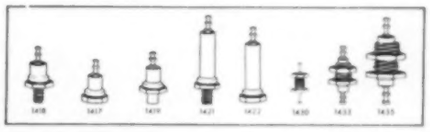
Type JC-20 is a new and smaller size of the company's portable wheel-mounted steam-spray machine previously described IEN-11667-50. It is designed to clean equipment installed in manufacturing departments without disturbing nearby workers. It connects to a power line to generate dry steam and deliver it through a hose-mounted lance. Solvent, if required, is picked up by the lance from a seperate source.

The assembly includes the two-drum boiler with heating electrodes in one of the drums and connections to the other to control pressure automatically. A small motor-driven pump supplies makeup water as required. Fittings are included to meet the ASME Code. Operation can be specified on 220 to 550 volts with rated input at 20 kw. maximum. Overall dimensions are 16 in. in width by 40 in. in length.

BREVITY—Identify by IEN - 2796 If you write the maker

CONNECTOR . . Miniature terminals for electronic equipment application

Source: U. S. ENGINEERING CO.
519-23 Commercial St., Glendale 3, Calif.



Series 1400 designates new addition to the company's line of miniature connectors, previously described IEN-2617-50. The series includes molded insulated terminal lugs, stand-offs and feed-throughs. The stand-off units are available with molded melamine or phenolic plastic to specification.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 2797 If you write the maker

...Now! more vital than ever!

TODAY, more than ever before, workers' welfare counts! One important instance is the installation of Halsey Taylor Coolers and Fountains at strategic locations throughout the plant, saving steps, reducing fatigue, keeping production at top peak! Get the facts

The Halsey W. Taylor Co.
Warren, Ohio

Halsey Taylor Fountains and Coolers

BREVITY—Identify by IEN - 2798 If you write the maker

NOW! A wiping tissue 100% grit-free

To make your cleaning operation efficient—economical. Fresh! Soft! *Disposable!* Kimwipes* industrial wiping tissues. Polish finished surfaces without scratching. Blot up to 15 times their weight in liquids. And so inexpensive, you can use a new tissue every time.

*T. M. REG. U. S. AND CAN. PAT. OFF.

A product of Kimberly-Clark

AUTOMATIC SERVE-UP PACKAGES

Write for further information and name of the Kimwipes distributor nearest you.

Kimberly-Clark Corporation, Neenah, Wisconsin

BREVITY—Identify by IEN - 2799 If you write the maker

HANSEN COUPLINGS

GIVE YOU 2 Big Advantages

● With Hansen couplings you save precious minutes every time you change air tools—every time you connect or disconnect a fluid line carrying gas, liquid or grease.

To connect, you merely push plug into socket—flow starts instantly. To disconnect, pull back sleeve on socket—coupling disconnects. Flow is shut off instantly and automatically.

Available in a wide range of sizes and types, each type engineered to meet the specific requirements of your particular application.

One-way shut-off, two-way shut-off, and straight-through types.
Write for Catalog

THE HANSEN MANUFACTURING COMPANY

4031 WEST 150th STREET • CLEVELAND 11, OHIO

BREVITY—Identify by IEN - 2800 If you write the maker

Indispensable . . .

when converting part of plant to war production

HEIN-WERNER HYDRAULIC JACKS

. . . make lifting and pushing jobs easier

Hein-Werner HYDRAULIC JACKS

Made in models of 1½, 3, 5, 8, 12, 20, 30, 50 and 100 tons capacity. Hein-Werner also makes "Push and Pull" Hydraulic Jacks of 4, 10, 20 tons capacity. See your industrial supply distributor, or write us.

HEIN-WERNER CORPORATION • WAUKESHA • WIS.

BREVITY—Identify by IEN - 2801 if you write the maker

You can do a lot

with a little **GOLD SEAL TAPE**

You can talk all you want so—Gold Seal is the best buy in tape. It *sticks* to the job. Laboratory control of production assures lasting "tack" in the friction compound. And it *goes further*. There's more tape value in every roll because there's no waste. In 10-roll cartons and single rolls — each roll cellophane-wrapped for factory-freshness. Jenkins Bros. (Rubber Division), 80 White St., New York 13, N. Y.

JENKINS *Gold Seal Tapes* FRICTION...RUBBER

MADE BY JENKINS BROS. . . . MAKERS OF FAMOUS JENKINS VALVES

BREVITY—Identify by IEN - 2802 if you write the maker

You'll find these products in SAFE HANDS!

HANDEEZ

a *must* where hands come in contact with lubricating oils . . . Lifts shop grime from pores, gently but *thoroughly*. Contains a sterilized vegetable emollient which acts as an absorbent. Non-irritating . . . keeps skin free of cracks where dermatitis starts. In powder form—bulks BIG at low cost.

BORSUDS

A borated, soluble hand cleaner for heavy grime on tender skin. Contains finest medium and low titer soaps (the lower the titer the more quickly soluble the soap). Lathers richly even in fairly hard water, cannot clog drains.

VOLAX

Extra-heavy duty hand cleaner. Removes ground-in grime, printing ink, stubborn dirt. Contains friable volcanic ash.

DISPENSING EQUIPMENT AVAILABLE

See your DOLGE SERVICE MAN or write for literature.

Dependable DOLGE

WESTPORT, CONNECTICUT

BREVITY—Identify by IEN - 2803 if you write the maker

Remove SCALE, PAINT, RUST Quickly . . . Easily

USE AURAND CLEANING TOOLS

For any hard metal or stone surface—iron—steel—brick—concrete, etc.

It's easy to remove paint, scale, rust and other accumulations with AURAND Cleaning Tools. Powered rotary chipping does a thorough cleaning job in less time. No special skill required. Even depth surface is assured by an adjustable shoe control. Cutter heads are renewable.

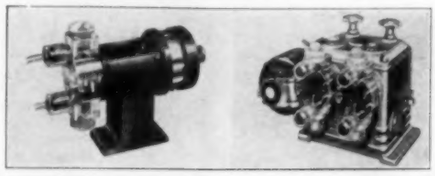
For further information, address Dept. 649

AURAND MFG. & EQUIP. CO.
2643 Colerain Avenue • CINCINNATI, OHIO

BREVITY—Identify by IEN - 2804 if you write the maker

FEEDING . . Metering pumps, to 900 cc. and to .33 gpm. capacities

Source: PROPORTIONEERS INC.
384 Harris Ave., Providence 9, R. I.



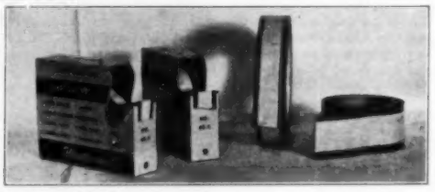
Pee-Wee diaphragm pump, to the left, and Constaflo double-diaphragm assembly, to the right, are two new units in the company's line of pump-type metering equipment for liquid feed. The small unit has an adjustable range between 100 and 900 cc. per min. based on 15 to 60 strokes per min., as determined by a contactor and cam assembly available as an accessory. The Constaflo unit ranges to a little over .33 gpm. for operation against pressures to 100 pounds. It is particularly suited for chemical process work where a constant non-pulsating flow is required.

Construction of both pumping elements includes a molded plastic body and a lucite measuring head. The larger of the two assemblies also includes a metal housing and motor drive. A built-in cam and rocker-bar movement is applied to each of the two diaphragms so one accelerates on its discharge stroke as the other completes its discharge and begins its suction movement. The sum of the two movements remains constant and delivery is pulsation free.

BREVITY—Identify by IEN - 2805 if you write the maker

MARKING . . Self adhesive tape, transparent plastic over colored back

Source: LABELON TAPE CO.
98-102 Anderson Ave., Rochester 7, N. Y.



New width measuring 1½ in. has been added to the three previously available widths of ⅝, ¾ and 1 in. in the company's Labelon tape, previously described IEN-8338-50. All four widths are now available in black, blue, red and green. Rolls measuring 400 in. in length and to 1 in. in width are packaged in a dispenser with a built-in cutting edge. An 800-in. industrial roll will fit in a standard tape dispenser.

The tape is made of two layers of acetate plastic with a white waxy substance laminated between them. The rear layer or that which is contacted on a surface to be identified is coated with a neoprene-base adhesive that adheres upon contact to glass, plastics, wood, metal, fabric. This backing tape presents a colored face toward the outside of the tape. Writing or printing or typing pressure on the outer face destroys the wax, exposes the bottom colored face to produce the required identification which cannot be smeared or rubbed off in service.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 2806 if you write the maker

BREVITY—Identify by IEN - 2807 if you write the maker

they call me Handy Andy

Here's the handiest test pump for hydraulically testing pipe, valves and fittings; for operating hydraulically actuated equipment; for hundreds of other uses in field, laboratory or shop. ★ This two-stage, manually operated pump has one cylinder for low-pressure testing (up to 2,500 psi); is quickly shifted to develop up to 6,000 psi. ★ Replaces elaborate, expensive testing equipment. ★ Readily portable (weighs only 70 pounds) and with a bucket of water you can quickly and painlessly develop on-the-spot pressures up to 6,000 psi. ★ Costs mighty little—lasts indefinitely—pays for itself long before a few inexpensive wearing parts need to be replaced. ★ For details and price address . . .

BAKER OIL TOOLS, INC.
BOX 2274 TERMINAL ANNEX
LOS ANGELES 54, CALIFORNIA

BREVITY—Identify by IEN - 2808 if you write the maker

END SCRAP PROBLEMS WITH THE ELOX M-10 RADIAL ELECTRON DRILL!

Completely *automatic* and as simple to operate as a drill press the Electron Drill will disintegrate a broken tap, drill, reamer; alter a mold or die; enlarge keyway slots in cutters or dies. Reasons enough why the largest automotive plants use three and four of this model on salvage alone! The Electron Drill cuts diamond hard steel without any special preparation. Cutting speeds and workmanship fully guaranteed.

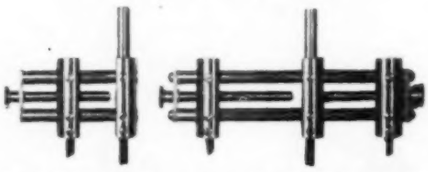
The ELECTRON DRILL is used and sold internationally.

ELOX CORPORATION OF MICHIGAN
740 N. Rochester Road • Clawson, Michigan

BREVITY—Identify by IEN - 2809 if you write the maker

LUFBRA ADJUSTABLE FLY CUTTERS

Designed for Perfect Rigidity
Vernier Adjustment ¼ Inch Tool Bit



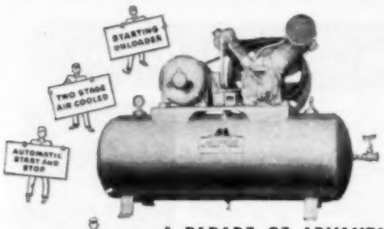
No. RS2 Single Bit No. DRS3 Double Bit

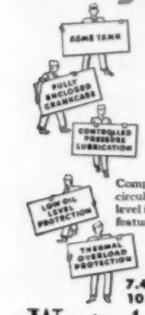
No.	Capacity	Type	Price
TS	4½ in.	Square Shank (for carpenter's brace)	$2.60
RS1	4½ in.	Round Shank	2.70
RS2	6½ in.	Round Shank	3.00
DRS3	6½ in.	Round Shank	4.20

Model TS has finest quality Carbon Steel Tool Bit—All others have 18% Tungsten High Speed Tool Bits. All are for hole and washer cutting by engineers, carpenters, mechanics and pipe fitters.

BRITISH OVERSEAS MART, INC.
300 Fourth Ave. New York 10, N. Y.
OREGON 7-3307

BREVITY—Identify by IEN - 2810 if you write the maker





A PARADE OF ADVANTAGES
Westinghouse Air Brake Co.
"Y" COMPRESSORS

All modern features . . . PLUS these vital Points of Protection

Same system as used in modern automotive engines. Positive over-running oil pump "meters" oil to working parts. Exclusive with the "Y".

Compressor will not load (pump air) until oil circulation is established . . . and unless oil level is at proper height. Another "Y" exclusive feature.

Automatic switch cuts power if motor overheats—standard equipment on the "Y".

7.4 to 41.5 CFM displacements . . . 1½ to 10 HP. Ask for Bulletin IDC 9302-3.

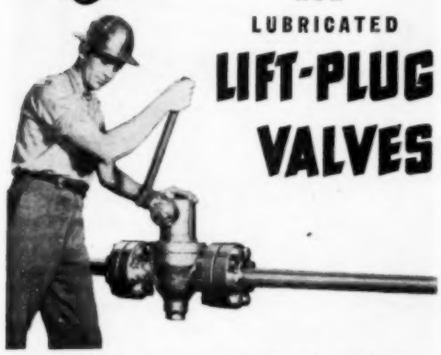
Westinghouse Air Brake Co.
Industrial Division: Wilmerding, Pa.
DISTRIBUTORS THROUGHOUT THE UNITED STATES
CONSULT YOUR CLASSIFIED DIRECTORY

BREVITY—Identify by IEN - 2811 if you write the maker

Eliminate
VALVE LUBRICATION EXPENSE AND BOTHER

Cameron

NON-LUBRICATED
LIFT-PLUG VALVES

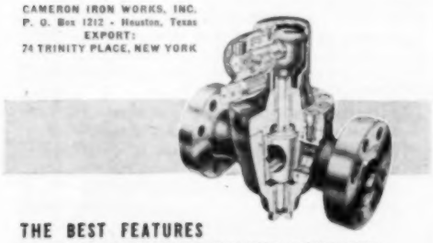


Body distortion will cause most conventional valves to leak because the sealing surfaces tend to separate under the action of pressure forces and line strains. To bridge this separation of sealing surfaces, a viscous lubricant is usually injected into the valve, resulting in high material and labor costs in order to maintain proper functioning.

The Cameron "Lift-Plug" Valve functions properly and seals without lubrication of the sealing surfaces due to the novel design which incorporates a separate seat and which is not attached to the body. Obviously, body distortions cannot affect the sealing efficiency because they cannot be transmitted to the seat. As a matter of fact, line pressure acts on the seat itself to improve the sealing contact between the seat and plug.

Completely descriptive literature and dimensional data will gladly be sent upon request.

CAMERON IRON WORKS, INC.
P. O. Box 1212 - Houston, Texas
EXPORT:
74 TRINITY PLACE, NEW YORK



THE BEST FEATURES OF PLUG AND GATE VALVES COMBINED WITH NEW CAMERON INNOVATIONS

NON-LUBRICATED — no grease of any kind required to effect a seal; prevents contamination of line products; and reduces chance for human error and need for maintenance. PRESSURE SEALING — when plug is seated, line pressure automatically forces seat into tighter engagement with plug — body distortions do not affect the seal. UNIQUE LIFT-PLUG ACTUATOR — a novel mechanical design which lifts, turns and reseats plug in continuous turn of a lever. RENEWABLE SEAT AND PLUG — easily replaced; permits any desired trim for specific services. REPAIRS ON THE JOB — can be completely overhauled without removal from line; no special tools or skill required. EASY OPERATION — requires less operating effort than other valve designs. FORGED STEEL — all parts, including body for most sizes, are press or drop forged from specification materials.

BREVITY—Identify by IEN - 2813 if you write the maker

FILTERING . . Cake sluicing header for company's pressure leaf filters

Source: NIAGARA FILTER CORP.
3078-82 Main St., Buffalo 14, N. Y.

Auto-Sluire is a new assembly of pressure-spray header and pneumatic operating motors in the cover section of the company's standard pressure-leaf filters. The header connects with a suitable pressure source for sluicing liquid and with an air line to the motors. It is employed at end of a filtering cycle to remove filter cake without having to open housing. The cake discharges to waste or for processing.

The design can be specified on new equipment or supplied for replacement application on standard equipment in the field in a range of sizes from 120 to 750 sq. ft. of filter area.

BREVITY—Identify by IEN - 2814 if you write the maker

DRILLING . . Solid carbide bushings for drills from .028 to 1.750 inches

Source: S & E MACHINE PRODUCTS INC.
51 Bartlett St., Bridgeport, Mich.

Company reworks worn bushings

New information has been published by the company covering its standard line of of solid carbide drill bushings which are available in four types. These include headless press fit, head press fit, fixed renewable and slip renewable. All are made to ASA standard design and are interchangeable with standard steel bushings that meet ASA specifications. The carbide bodies are precision ground and lapped. Steel rings are employed on those units including heads. Special bushings can be supplied to specification.

BREVITY—Identify by IEN - 2815 if you write the maker

DRYING . . Refrigerating unit to remove excess moisture from a room

Source: WALTER HAERTEL CO.
2838-42 Fourth Ave., S., Minneapolis 8, Minn.

Model 50 designates new refrigerating type of dehumidifier to remove moisture from relatively small spaces on connection to an ac. power line. The housing encloses a hermetically-sealed refrigerating unit driven by a ½-hp. motor. It serves a drying coil that separates moisture from the air passed over it by a fan.

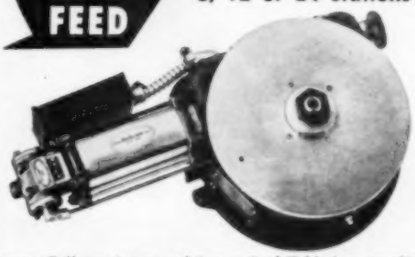
The moisture flows to a container for removal at intervals or can be connected to a sewer. The machine will remove as much as a gallon of water from the air in a storeroom or other area in 4 to 5 hr., rates 50 lb. of condensate in 24 hours.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2816 if you write the maker

Electrically-Controlled Air-Powered DIAL FEED

Adjustable for 4, 6, 8, 12 or 24 stations



THE Bellows air-powered Rotary Feed Table is a complete "packaged" unit with all valves and valve operating controls built in. The built-in Electroaire Valve simplifies synchronized operation with drill presses, punch presses, arbor presses, etc. 10" diameter table top is geared to provide 4, 6, 8, 12 or 24 stations. Table top may be drilled, tapped, or otherwise machined for mounting jigs, fixtures or even larger size table tops.

• *Write today for Bulletin T-80. Address Dept. IEN-351.*

The Bellows Co.
Akron 9, Ohio

BREVITY—Identify by IEN - 2817 if you write the maker

Clean grease-caked floors quickly!

KENT DRY SCRUBBER

Grease accumulations are no problem when the sturdy KENT D-20 DRY SCRUBBER tackles the impacted dirt on your plant floors. One man does the work of several when this dependable machine assists him—and he does it better! For safety's sake, see what the KENT DRY SCRUBBER can do! Literature available on request.

KENT Brushes are self-sharpening

Five individual brushes rotate as a unit, maintain top cutting efficiency as they work!

KENT DRY SCRUBBER Model D-20

Manufacturers of KENT Floor Machines, KENT Commercial Vacuum Cleaners, KENT Flux Recovery Units, KENT Furnace Cleaners

CLEAN WITH KENT EQUIPMENT

THE KENT COMPANY INC., 437 CANAL ST., ROME, N. Y.

BREVITY—Identify by IEN - 2818 if you write the maker

WANT A REPUTATION FOR PRECISION?

Inspect Your Parts Magnified on a Bright Screen

The Kodak Contour Projector, Model 2, has unique features that permit efficient staging fixtures to keep inspection costs low and inspection standards high.

There's a full eight inches between lens and object, unchanging for any of six quickly dialed magnifications up to 100×—all comfortably visible in a lighted room on an uncurtained 14" screen. You can put the object in any of five planes: vertical, horizontal downward, at left of lens, at right, or atop a glass table. And just by flipping a switch, you get illumination through the projection lens itself to show surface detail and explore deep recesses.

A new booklet giving complete information about this versatile projection microscope is yours for the asking. Write to Eastman Kodak Company, Industrial Optical Sales Division, Rochester 4, N. Y.

the KODAK CONTOUR PROJECTOR

shows contours, of course . . . surface details . . . deep recesses

BREVITY—Identify by IEN - 2820 if you write the maker

You hear 'em less...that's why Abart GEARS LAST LONGER!

Skilfully cut to exact specifications, Abart Gears run with *smooth* precision. They have none of the erratic motion that causes noise and wear. That's why *quiet-running Abart Gears last longer*, are more economical and trouble-free.

Abart's large production facilities can provide gears cut to your precise specifications with surprising speed. Spurs, bevels, worms, helicals, internals, worm-wheels, spirals, sprockets and racks . . . Abart can furnish them all in any metallic or non-metallic gear material.

Send B/P or Specifications Today for Prompt Quotation. We Carry No Stocks.

Abart GEAR & MACHINE CO.

4823 W. 16th St. Chicago 50, Ill.

BREVITY—Identify by IEN - 2821 if you write the maker

HERE'S LOW COST, POSITIVE TEMPERATURE CONTROL with Alnor ACCURACY

Alnor Temperature Controller

Now—at a cost far less than you may think—you can bring automatic, precise temperature control to industrial furnaces, melting pots, ovens—in fact, to any heating device whether electrically heated or fuel fired. Alnor quality throughout, it features the famous double air gap pyrometer movement; easily read, 6-inch mirrored scale; automatic cold-end compensator; weather-proof, dust-tight case—a truly rugged, precise instrument at a price you can afford. Write today for complete information and price. Illinois Testing Laboratories, Inc., Room 517 420 N. LaSalle St., Chicago 10, Ill.

Alnor

PRECISION INSTRUMENTS FOR EVERY INDUSTRY

BREVITY—Identify by IEN - 2822 if you write the maker

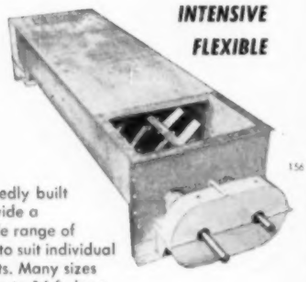
SPROUT WALDRON MUNCY, PENNSYLVANIA

CONTINUOUS MIXERS

DOUBLE AGITATOR TYPE

INTENSIVE

FLEXIBLE



These ruggedly built Mixers provide a considerable range of adjustment to suit individual requirements. Many sizes available up to 16 ft. long agitating chambers. Write today for literature to Sprout-Waldron & Co., Inc., 5 Waldron St., Muncy, Penna.

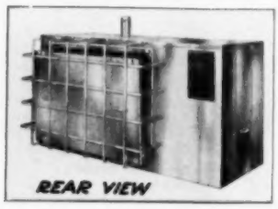
Vertical Mixers, Attrition Mills, Rotary Feeders, Ribbon Type Mixers, Crushers, Knife Cutters, Continuous Mixers, Roller Mills, Separators, Pulleys

SPROUT-WALDRON

BREVITY—Identify by IEN - 2823 if you write the maker

HEATING . . Electric oven particularly for safe laboratory use

Source: ELECTRIC HOTPACK CO. Melrose St. at Cottman Ave., Philadelphia 35, Pa.



Pressure latches to prevent the front hinged doors from opening in the event of an explosion, a rear explosion panel that does release in the event of excessive internal pressure with a cage to restrain its movement beyond about 8 in. from the oven housing, insulated and separately enclosed and ventilated electrical equipment outside of the oven enclosure, a 4-in. exhaust port to ventilate vapors and fumes in the top of the housing, oven-temperature control in addition to regular thermostat control, all are combined in this new oven to make it safe for laboratory use.

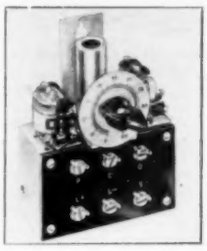
The interior is made of polished stainless steel including the door sill and shelves. The exterior is cold-rolled steel finished in baked laboratory grey enamel. Joints and seams are welded and ground smooth. Insulation is a 3-in. layer of precompressed glass wool. A motor-driven blower circulates air across the heater banks through the perforated side wall, horizontally across the oven chamber for recirculation. An intake and exhaust vent are built into the circulating circuit to permit regulated interchange of air. Pressure developed by the blower prevents infiltration of air.

Three sizes have interior dimensions ranging from 12 by 14 by 14 in. to 36 by 24 by 24 inches. Corresponding exterior dimensions are 23 by 30 by 40 in. to 64 by 26 by 38 inches. Two ranges are from 35 to 180 deg. C. with a temperature differential within ½ deg. C. and from 35 to 260 deg. C. with a temperature differential within 1 deg. C. Current input is 1,400 to 3,000 watts and 2,000 to 3,800 watts of specified 110 or 220 volt ac. List prices in the low range are $355 to $775 and in the high range are $405 to $825.

BREVITY—Identify by IEN - 2824 if you write the maker

TIMING . . Electronic interval unit employs cold cathode trigger tube

Source: FARMER ELECTRIC CO. 23-B Mossfield Road, Waban 68, Mass.



Four ranges, maximum at 1.5, 3, 6 and 12 sec., are available in this new Model-CK electronic timer. Setting can be made for any intermediate point in a given range by operating the dial at the front of the assembly. Recycling is instant. There is no wear on the tube during standby intervals and no warm-up is required.

Operation is on 110-volt 60-cycle ac. The load relay rates 8 amp. on 110-volt ac. Its contacts are single-pole double-throw action without intermediate "off". Overall dimensions are 3¾ by 3 by 4⅞ inches. List price of the new assembly is $29.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2825 if you write the maker

CHIKSAN

High Pressure Ball-Bearing SWIVEL JOINTS

Made in 8 different styles for rotation in 1, 2 and 3 planes; in sizes from ⅜" to 5"; for pressures to 3,000 psi. and temperatures to 225° F. Easy turning throughout 360° on double rows of ball bearings in flame-hardened races. Supplied with Packing Units to meet your specific needs.

There is a CHIKSAN Swivel Joint for every need

CHIKSAN TRADE MARK REG.

CHIKSAN COMPANY AND SUBSIDIARY COMPANIES

Chicago 3, Ill. BREA, CALIFORNIA Newark 2, N. J.

WELL EQUIPMENT MFG. CORP. HOUSTON 1, TEXAS

CHIKSAN EXPORT CO. BREA, CALIFORNIA NEWARK 2, N. J.

BALL-BEARING SWIVEL JOINTS FOR ALL PURPOSES

BREVITY—Identify by IEN - 2826 if you write the maker

HOW Cheap IS A Cheap GEAR?

EXAMPLE — A cheap gear gave out in a Multi-Spindle Automatic Chucking Machine — was replaced by a standardized BOSTON Gear.

Net difference in cost between a BOSTON Gear and a cheap gear	$0.80 "saved"
Cost of repairing machine (two men, 9 hrs.) @ $1.80 per hour per man	32.40 lost
Loss of profit through loss of 9 hours production — 40 pieces per hour x $1.25 per piece x 9	450.00 lost
NET LOSS	$481.60

(To say nothing of the re-scheduling headaches involved)

Gears of inferior quality wear out faster, are noisier, waste power, cause frequent bearing replacement. Specify STANDARDIZED BOSTON GEARS. Design them into your equipment. Get them from 80 Authorized Boston Gear Distributors.

BOSTON Your stocks are Now

BOSTON GEAR WORKS

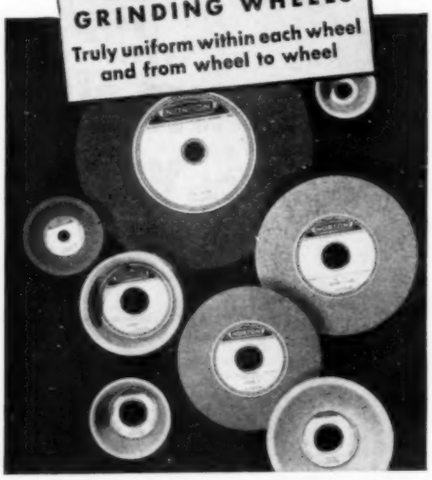
63 HAYWARD ST., QUINCY 71, MASS.

BREVITY—Identify by IEN - 2827 if you write the maker

TOOLROOM GRINDING COSTS GO DOWN when you specify:

NORTON NEW-PROCESS GRINDING WHEELS

Truly uniform within each wheel and from wheel to wheel



YOUR NORTON DISTRIBUTOR NOW HAS THEM in sizes and shapes up to 12" diameter for any toolroom grinding job. ASK FOR THEM.

YOU GET ALL 3

1. BUILT-IN BALANCE means less vibration . . . closer tolerances . . . smoother finishes . . . no chatter marks. And this inherent balance stays for the life of each wheel.

2. MORE UNIFORM STRUCTURE means more even wear . . . fewer machine adjustments . . . less risk of tool spoilage . . . assurance that all identically marked wheels will perform identically.

3. FASTER, SMOOTHER, MORE EFFICIENT CUTTING ACTION with the right Norton Alundum* abrasive means deeper cuts in high-speed steel and cast alloy tools without drawing their temper . . . less frequent dressings . . . big savings in time and toolroom grinding costs.

WRITE FOR DETAILS concerning types and sizes of Norton *New-Process* grinding wheels for toolroom operations. NORTON COMPANY, WORCESTER 6, MASS. Warehouses in 5 cities. Distributors in all principal cities.

*Trade-Mark Reg. U. S. Pat. Off. and Foreign Countries

NORTON ABRASIVES

Making better products to make other products better

BREVITY—Identify by IEN - 2829 if you write the maker

HARGRAVE

THE CLAMPS YOU CAN'T OVERWORK

INDIVIDUALLY *POWER*-TESTED FOR BETTER PERFORMANCE

Hargrave Clamps are backed by 71 years of clamp know-how . . . with tough, flaw-free construction. All parts subjected to rigid production tests . . . and accurately fitted by skilled craftsmen. Easy to adjust, they cut costs in hundreds of operations. Used and approved by industry everywhere. Made in openings from ¾ in. to 12 ft., from ½ in. to 16 in. deep. Write today for free catalog showing complete line of Hargrave Individually Tested Clamps, Chisels, Punches, Brace Wrenches, Star Drills, Dust Ejector Masonry Drills, Washer Cutters, and File Cleaners.

HARGRAVE Tested Tools
THE CINCINNATI TOOL COMPANY
1953 Waverly Ave.
Cincinnati 12, Ohio

THERE IS AN INDUSTRIAL DISTRIBUTOR STOCK NEAR YOU

BREVITY—Identify by IEN - 2830 if you write the maker

DIAPHRAGM OPERATED CONTROL VALVES in CORROSION RESISTING ALLOYS

PROMPT DELIVERIES, because they're machined from available barstocks . . . NO CASTING DELAYS!

Your requirements for pneumatic control valves in many unusual alloys can be met promptly with CONOMOTOR Type AB-10 Barstock body valves. Available in ½", ¾" and 1" nominal pipe sizes with screwed connections. Standard 600 pound pressure rating can be furnished as semi-standard for pressures to 3,000 psi (cold).

STANDARD MATERIALS AVAILABLE

Hastelloy, Durimet, Monel, Everdur, Nickel

And most other machineable metals

REQUEST BULLETIN AB-10-2

Cono-Controls
CONOFLOW CORPORATION
4100 Arch St., Phila. 3, Pa.

BREVITY—Identify by IEN - 2831 if you write the maker

NO MUSCLE MEN NEEDED!

RED GIANT Hydraulic Hand PALLETRUCK

Good-bye to grunts and groans! This powerful hydraulic pallet lift truck is easy to push, easy to pull. Slide planes lift or lower forks for smooth entry into or exit from double faced pallets. Handle pumping is simple . . . quick . . . takes little effort. Model shown has two-ton capacity. One-ton Red Giant Palletruck also available. Fill in coupon for fact-packed bulletin. Do it now!

RE-100

BULLETIN

REVOLVATOR CO.

Designers and Manufacturers of Material Handling Equipment
8759 TONNELE AVE., NORTH BERGEN, N. J. • SINCE 1904

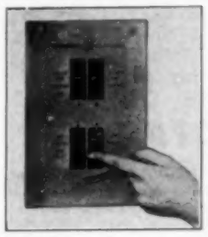
Without obligation, please send bulletin on Red Giant Palletrucks

Name .....
Position .....
Company .....
Address .....

BREVITY—Identify by IEN - 2832 if you write the maker

SWITCH . . Plug-in circuit breakers in 4 through 20 circuit load centers

Source: TRUMBULL ELECTRIC MFG. CO.
39-43 Woodford Ave., Plainville, Conn.



Type TOL is a new circuit breaker of plug-in design with thermal-magnetic protection for assembly in load-center panels serving from 4 to 20 circuits. The breaker has a trip-indicating handle and a trip-free mechanism. Each unit is held positively in the panel by self-aligning pressure contacts made of silver-plated copper. Pressure is maintained by a steel spring. The breaker assembly is enclosed and sealed against tampering. Capacities per breaker are 15 to 50 amperes.

Bulletin, 12 pages, "Trumbullite Load Centers," presents detail illustrated information on the breaker unit, panelboard construction, data on nine basic units, notes on installation.

BREVITY—Identify by IEN - 2833 if you write the maker

METAL . . Copper clad sheet shields against electronic interference

Source: AMERICAN CLADMETALS CO.
P. O. Box 844-A, Carnegie, Pa.

Company supplies working instructions

Electroshield trade names new copper-clad low-carbon steel sheet for use in equipment shielding to prevent transmitting waves that will cause interference and to prevent interference from external sources. The sheets are available in thicknesses from .0375 in. up, in width to 48 in., and in length to 132 inches. The steel base is magnetic. The surface on one or both sides is clad with chemically-pure copper bonded permanently to the base metal. The copper is .008 in. in minimum thickness. The sheets are hot rolled, annealed, pickled and leveled ready for fabrication.

BREVITY—Identify by IEN - 2834 if you write the maker

DRIVE . . Tilting motor base for belt adjustment on small motors

Source: LOVEJOY FLEXIBLE COUPLING CO.
5177 W. Lake St., Chicago 44, Ill.

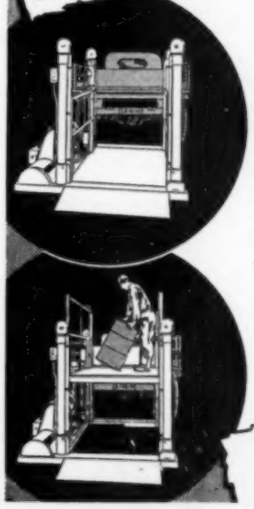
List price is $6.00. Overall dimensions are 5½ by 7 in. and weight is 10 lb. for this new motor base. The tilting action is controlled by a screw to move the motor for belt adjustment in setting a desired tension or in changing output speed when a variable-pitch sheave is employed on the motor.

Position of the motor rails can be changed on their supporting shafts to accommodate motors of various sizes. Slotted holes in the rails serve the same purpose at right angles.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 2835 if you write the maker

Easy Way to . . . SPEED UP YOUR SHIPPING!



ATLAS ONE-MAN TRUCK LOADER

"The Portable Loading Platform"

- 1 to 3 ton capacity
- Up to 20 ft. range
- Easily moved on retractable casters

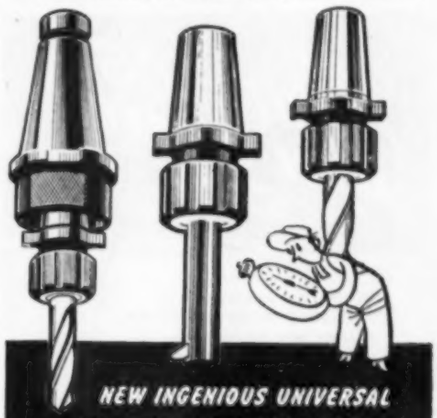
Standard platform 4 ft. x 4 ft.—other sizes to meet your requirements. Electrically operated with either floor or platform control or both. Rugged, all welded steel construction. No strain . . . no exertion with Atlas One-Man Truck Loader.

Also Makers of HI-LIFT Extension Scaffold and HI-LIFT Marquee Servicer

Write for Complete Information . .

ATLAS INDUSTRIAL CORP.
847 - 39th Street
Brooklyn 32, N. Y.

BREVITY—Identify by IEN - 2836 if you write the maker



NEW INGENIOUS UNIVERSAL "KWIK-SWITCH" TOOL HOLDER PERMITS 10 SECOND TOOL CHANGES WITHOUT ACCURACY LOSSES

— UNIVERSAL ENGINEERING CO.

FRANKENMUTH 6, MICHIGAN

BREVITY—Identify by IEN - 2837 if you write the maker

HYDRAULIC smoothness in a positive MECHANICAL drive

Cone-Drive DOUBLE-ENVELOPING gears give you this "hydraulic" smoothness because:

1. Regardless of the number of teeth in the gear, a full ⅛ of the teeth are **simultaneously** in contact.
2. **Every tooth** remains in **continuous** contact while engaged.
3. **Velocity is constant.**

Ask us to tell you more about them

CONE-DRIVE GEARS
DOUBLE ENVELOPING GEAR SPEED REDUCERS
Lorain Michigan Tool Company
7171 E. McNichols Road • Detroit 12, Michigan

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AEROTEC GAS SCRUBBERS KEEP THE *Big Inch* CLEAN

Fig. 1 Four Aerotec Gas Scrubbers, each designed to handle 100,000,000 SCFD at an operating pressure of approximately 700 psig. This shows method of manifolding to total 400,000,000 SCFD capacity.

From Texas to Pennsylvania, Aerotec Gas Scrubbers, stationed along the BIG INCH, remove water, distillates and dust.

Above is the Aerotec installation on the "Big Inch" at Waynesburg, Pa. Installed for Texas Eastern Transmission Corporation, this 400,000,000 SCFD installation is typical of manifolding possible, with standard 100,000,000 SCFD units, for increasing capacity.

The Aerotec method of separating gas from foreign material is a dry process. Since no oil or other liquid is used for separation, no carryover of these cleaning mediums into the gas stream is possible. Write for Catalog 501.

Project and Sales Engineers

THE THERMIX CORPORATION
Greenwich, Conn.
(Offices in 28 Principal Cities)

THE AEROTEC CORPORATION
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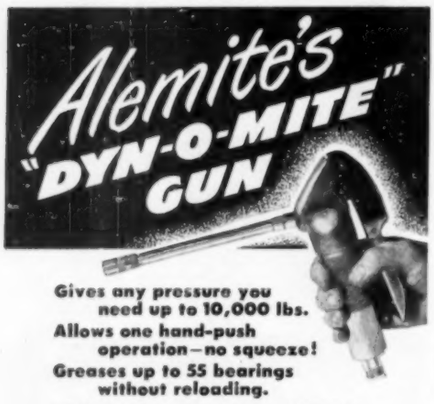

Gives any pressure you need up to 10,000 lbs.
Allows one hand-push operation—no squeeze!
Greases up to 55 bearings without reloading.

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Join piping "Flexible-Tight" in half a minute with Dresser "No-Thread" Fittings. Just slip the fitting over plain pipe ends and tighten end nuts with a wrench. Joints are permanently tight. Resilient rubber gaskets absorb vibration, expansion, contraction.

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Brief reviews to advise you of available new information published by the manufacturers covering products they offer for your use. Identification, size of the material, information it contains so you can judge its value to you.

ADHESIVES . . For chemical, electrical, heat-resisting and other applications; product data summaries and use instructions. "Technical Cements", 62 pages. Sauereisen Cements Co., 1043-47 N. Canal St., Pittsburgh 15, Pa. **IEN-0242**

ALLOYS . . Precious-metal alloys for electrical contacts, resistance wire, wear-resistant parts; properties, standard products, fabrication service. Bulletin R-12, 20 pages. J. M. Ney Co., 69-73 Elm St., Hartford 6, Conn. **IEN-0243**

BROACHING . . Vertical and horizontal hydraulic machines; condensed catalog data on standard units, also on hydraulic presses, 6 to 300 ton. Bulletin 10052, 4 pages. Oilgear Co., 1560 W. Pierce St., Milwaukee 4, Wis. **IEN-0244**

BUILDING . . Corrugated Plexiglas plastic sheet for roof and sidewall glazing; installation detail drawings on these and other uses. Booklet PL-78, 24 pages. Rohm & Haas Co., 220-24 Washington Square, Philadelphia 5, Pa. **IEN-0245**

BUILDING . . Maintenance checking chart with recommendations on the company's materials grouped by roofs, floors, surfaces. Bulletin S-305-3, 6 pages. United Laboratories Inc., 16803 Euclid Ave., Cleveland 12, Ohio **IEN-0246**

BURNERS . . Horizontal rotary oil burner for No. 4 to No. 6 fuel; operating principle, construction features, hourly capacity ratings. Bulletin G, 4 pages. Ray Oil Burner Co., 403-497 Bernal Ave., San Francisco 12, Calif. **IEN-0247**

CASTINGS . . Precision castings made by the Microcast process; eight examples on how to employ them in product design. "Case Histories", 8 pages. Austenal Laboratories, 5930-34 W. Wentworth Ave., Chicago 21, Ill. **IEN-0248**

CASTINGS . . In non-ferrous metals, sizes 10 by 20 in. to 4 ton; illustrated foundry facilities, examples of work. Bulletin B-51, 8 pages. Jas. H. Matthews & Co., 1313-17 W. Liberty Ave., Pittsburgh 26, Pa. **IEN-0249**

CENTERS . . Ball-bearing machine center to use with carbide-tool operations; types, sizes, specifications, list prices, notes on their bearings. Bulletin 481-D, 4 pages. Ready Tool Co., 552-56 Iranistan Ave., Bridgeport 5, Conn. **IEN-0250**

CHUCKS . . Hardinge-Sjogren handwheel-operated collet chuck for lathes; operation, models, specifications, list prices, collets. Bulletin 8, 8 pages. Hardinge Brothers Inc., 1416-20 College Ave., Elmira, N. Y. **IEN-0251**

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New Houdaille Mobile Coolant Filter provides quick, simple filtration of soluble coolants. Removes fine chips and contamination from the sump itself, preventing accumulation of foreign matter.

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"Automatic Protection for Man & Machine"

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- Will not bend or dent
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Protects Pins and Bushings from Dirt and Scale
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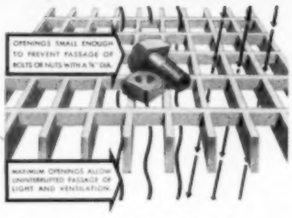

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Hermetically sealed mercury switch is used. They cannot be affected by dust, dirt or corrosion, nor are they subject to open arcing, oxidation, pitting or sticking of contacts, all common causes of contact trouble. This switch will give better control service and longer control life.

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(Hidden back of cover)

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CLEANING . . Material to use as an electrolytic and soak-tank cleaner or a water conditioner for paint spray booths; application notes. Pocket folder, "Detrex 10", 6 pages. Detrex Corp., P. O. Box 501-A, Detroit 32, Mich. **IEN-0253**

COMMUNICATING . . Type-FE frequency-modulated radio for railroad communication; general description. Bulletin B-4748, 6 pages. Westinghouse Electric Corp., 511 Wood St., Dept. IEN, Room 1110, Pittsburgh 30, Pa. **IEN-0254**

CONNECTORS . . For electric and electronic equipment, also lamp sockets, specials; condensed data summaries on new units. "What's New at Alden's", 4 pages. Alden Products Co., 115-19 N. Main St., Brockton 64, Mass. **IEN-0255**

CONNECTORS . . Crimp-type electric connectors and tools, cable and conduit fittings, terminal blocks; construction points and sizes. Catalog 1050, 16 pages. Buchanan Electrical Products Corp., 1288-92 Central Ave., Hillside, N. J. **IEN-0256**

CONSTRUCTION . . Concrete vibrators and vibrating screeds; illustrated models with gasoline-engine or electric power, accessory equipment. Bulletin 507, 4 pages. Stow Mfg. Co., 55-59 Shear St., Binghamton, N. Y. **IEN-0257**

CONSTRUCTION . . Buildings for recreational purposes built of timber; illustrated examples, fabrication and assembly. "Recreational Buildings", 24 pages. Timber Engineering Co., 1317-21 18th St. N. W., Washington 6, D. C. **IEN-0258**

CONTROLS . . For boiler feed water; color-coded schematic operating diagrams of the company's three-element controls, performance charts. Bulletin 105-C, 16 pages. Bailey Meter Co., 1065 Ivanhoe Rd., Cleveland 10, Ohio. **IEN-0259**

CONTROLS . . "Densitrol" instrument to measure and control liquid density; operating principle, characteristics. Bulletin W-2, 8 pages. Precision Thermometer & Instrument Co., 1422 Brandywine St., Philadelphia 30, Pa. **IEN-0260**

CONTROLS . . "Capacilog" electronically-operated strip-chart recorder for process variables; schematic operating drawing, details. Bulletin C-2-2, 4 pages. Wheelco Instruments Co., 845-49 W. Harrison St., Chicago 7, Ill. **IEN-0261**

CONVEYING . . Chain and attachments; illustrated designs and uses in slat, scraper, drag, vertical, pusher, extended-pin conveyors and a chain alone. Bulletin 50-S5, 12 pages. Chain Belt Co., 1675 W. Bruce, Milwaukee 4, Wis. **IEN-0262**

CONVEYING . . "Ohio" tramrail equipment, cranes, transfer bridges; general illustrated description of components and features, electrification. Bulletin 105, 4 pages. Forker Corp., 2053 Random Road, Cleveland 6, Ohio **IEN-0263**

CONVEYING . . Rubber-fabric belts for conveyor and elevator service; construction and service recommendations on standard and special types. Catalog 2200, 26 pages. B. F. Goodrich Co., 448-52 S. Main St., Akron 11, Ohio **IEN-0264**

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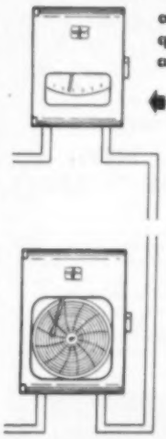
and improve production and quality by remote measurement and control



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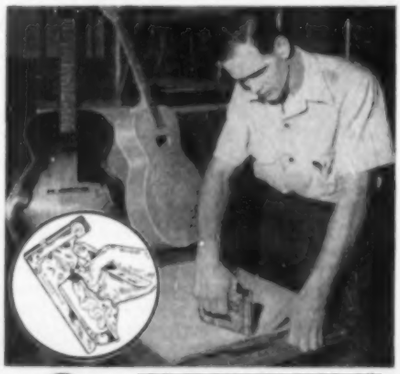

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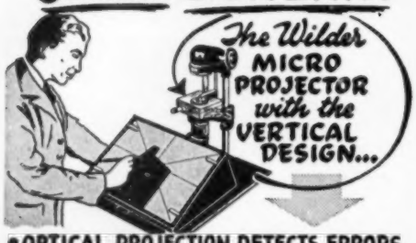

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NEW LITERATURE—Continued

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CONVEYING . . Roller and wheel gravity conveyors, power belt conveyors; specifications on standard units, drive assemblies, uses. Bulletin 63-B, 24 pages. Standard Conveyor Co., 64 Indiana Ave., North St. Paul 9, Minn. **IEN-0265**

COOLING . . Mechanical-refrigeration equipment for space cooling, process and material cooling, air conditioning; picture summary. Bulletin GCA-2637, 10 pages. Frigidaire Div., General Motors Corp., 302 Taylor St., Dayton 1, Ohio **IEN-0266**

COOLING . . Electric units to cool drinking water; condensed data on fountain, glass-filler, bottle, special models, water purifier, service facilities. Pocket folder A-216, 20 pages. Sunroc Co., 51 Pennell Road, Glen Riddle, Pa. **IEN-0267**

CORROSION PROOFING . . "Eino" magnesium-alloy rod to prevent rust in hot-water tank by electro-chemical action; description, installation. "Anodic Rod", 8 pages. Cleveland Heater Co., 2308 Superior Ave., Cleveland 14, Ohio. **IEN-0268**

COUNTING . . Electronic punched-card equipment to use in selling clothing; schematic on steps in handling data, reports. "Electronics Is High Fashion", 10 pages. Remington Rand, 315 Fourth Ave., Rm. 1618, New York 10, N.Y. **IEN-0269**

CRANES . . Crawler and wheel-mounted crane or ½-yd. excavator, lift capacity to 12½ ton; illustrated construction points, attachments. Catalog 417, 14 pages. Wayne Crane Div., 2511-13 Taylor St., Fort Wayne 1, Ind. **IEN-0270**

CUTTING . . Carbide lathe tools, cutter blanks, parts, special tools; descriptions, sizes, uses, selection tables on grades and machining speeds. Catalog GT-250, 60 pages. Carboloy Co., 11167 E. 8-Mile Road, Detroit 32, Mich. **IEN-0271**

DRIVES . . Worm-gear speed reducers, standard and fan-cooled designs; six illustrated application examples, review of available units. Bulletin "Dependable", 8 pages. Cleveland Worm & Gear Co., 3258 E. 80th St., Cleveland 4, Ohio **IEN-0272**

DRIVES . . "Torque-Arm" single-reduction speed reducers; selection and drive data on four sizes to 27 hp., dimensional drawings and tables. Bulletin A-602, 12 pages. Dodge Mfg. Co., 500 S. William St., Mishawaka, Ind. **IEN-0273**

DRYING . . "Sani-Dri" hot-air blower for washrooms; specifications on the unit, data on wall and floor-mounting models. Folder 1119, 4 pages. Chicago Hardware Foundry Co., 3002 Commonwealth Ave., North Chicago, Ill. **IEN-0274**

DRYING . . Electric radiant heating element for process use; picture examples of its application from warming hands to degreasing metal. Mailing Folder F-1523, 4 pages. Edwin L. Wiegand Co., 7505 Thomas Blvd., Pittsburgh 8, Pa. **IEN-0275**

ENGINEERING . . Data sheets in 3¾ by 6¾-in. size for looseleaf binders; index and list prices on mathematical and engineering information. 1951 Data Index, 48 pages. Lefax, Sansom & Ninth Sts., Philadelphia 7, Pa. **IEN-0276**

EQUIPMENT . . English-made lathes, shapers, grinders, other machine tools; condensed data on these and vises, plates, centers. "Machine Tools", 50 sheets. British Overseas Mart, 300 Fourth Ave., Rm. 1407, New York 10, N. Y. **IEN-0277**

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- Speed material handling
- Isolate dust and fumes
- Isolate fire hazards
- Reduce cost of air conditioning and heat

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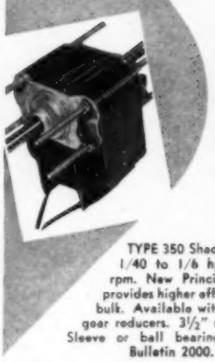
fractional hp
MOTORS
CONCENTRATED POWER



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Here's a way to really produce extra profits with your present rocker arm spot welders. All it takes is the simple installation of a compact Weld-Air-Matic. This self-contained control unit *airpowers* your welder—adds speed, accuracy and ease of operation not realized in your present foot-operated welder.

Tests Prove 10,000 Welds Hourly On Continuous Daily Schedules

Feather-touch foot switch controls pressure by energizing a coil on a 4-way operating valve. Employing reduced air pressure of 15 to 50 lbs., it has a maximum stroke of 1½" on size 1 unit, 2" on size 2, and 2½" on size 3 unit. Requires a minimum of 4 cu. ft. air supply per minute with 80 lbs. minimum line pressure, and any standard Weld Timer. Three sizes available—all accessories mounted to one strong aluminum alloy casting.

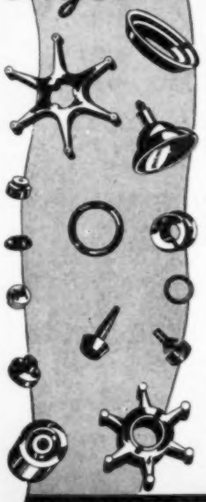
Get the facts on how you can break all previous production records by modernizing with the new Weld-Air-Matic. The savings you'll make will quickly compensate for the nominal investment.

ROBT. W. HOFFMAN COMPANY, INC.
42 South Clinton Street Chicago 6, Illinois

BREVITY—Identify by IEN-2859 if you write the maker

RUBBER *Injection Molding*

Precision
Mass Production



We specialize in small precision rubber parts produced by our exclusive injection molding process. Where accuracy and close tolerances are required—*call for injection molding.* Hundreds of successful installations on hydraulic equipment . . . automotive machinery . . . radios and television . . . refrigeration equipment . . . pneumatic machinery . . . valves . . . electrical equipment. Natural or synthetic rubber. Special compounds made to your specific requirements. *Send us your blueprint or specifications for a prompt analysis and quotation.*

- O-Ring Seals
- Insulators
- Grommets
- Bushings
- Pump Impellers
- Specialized units including rubber-bonded-to-metal

OFFICES: *New York • Chicago • Cleveland • Detroit • Milwaukee*

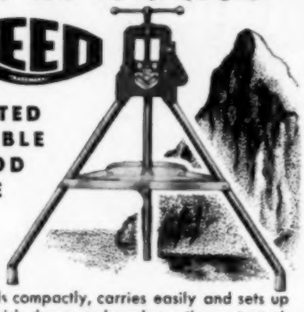
Write for Circular on INJECTION MOLDING or O-RINGS

MINNESOTA RUBBER & GASKET CO.
3640 Wooddale Avenue
Minneapolis 16, Minn.

BREVITY—Identify by IEN - 2860 If you write the maker

Solid as a Rock!

the REED



PATENTED PORTABLE TRIPOD VISE

One unit. Folds compactly, carries easily and sets up instantly. A quick downward push on the patented, large-surface tray locks the stand solidly so that all cutting or threading effort goes into the work. Legs cannot buckle under any working conditions. They line up vertically with the face of the well-known REED long-jaw vise. Ask your jobber or write . . .

REED TRADEMARK

MANUFACTURING COMPANY
ERIE, PENNSYLVANIA

BREVITY—Identify by IEN - 2861 If you write the maker

MONARCH CURED-ON TIRES

Soft Touch for Floors

Easy-going Monarch Tires on your hand trucks will make your floors last longer, reduce your floor repair bills—Monarch Tires never groove or chip floors. Monarch-equipped caster wheels are instantly responsive to changes in direction. Make sure the hand trucks you buy are equipped with Monarch Tires. Available in oil-resistant synthetics.

The leading manufacturers of industrial trucks, both hand and powered, use Monarch Tires as original equipment.

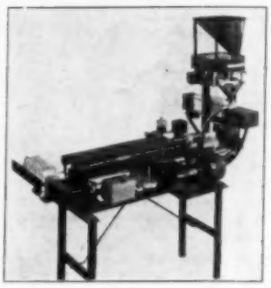
THE MONARCH RUBBER COMPANY
201 LINCOLN PARK HARTVILLE, OHIO

SPECIALISTS IN INDUSTRIAL SOLID TIRES AND MOLDED MECHANICAL RUBBER GOODS

BREVITY—Identify by IEN - 2863 If you write the maker

PACKAGING . . Automatic machine measures seed into packets and seals

Source: PLAGEMAN ENTERPRISES
120-24 Sylvia St., Willoughby, Ohio



Pack-A-Matic trade names new automatic machine now being put into production by the company to be ready for the next season's "pack." It will measure variable amounts of a wide range of plain or coated seed into packets feeding from a magazine and opening by vacuum to receive them. It applies glue to the flap of each filled packet and seals the packet. Then it delivers to a conveyor or receiving container. Each movement is interlocked against faulty operation. Capacity is from 2,500 to 4,500 filled packets per hour.

Seed is loaded into the machine's supply hopper or the hopper is connected to an overhead supply bin. Feed is by gravity through a tube and hollow brush to an oscillating tray. This tray is fitted with interchangeable measuring cups for varying types and quantities of the seed. The cups are brought alternately into fill and discharge positions by the oscillating action. Changeover from one type of seed and packet size to another as well as cleanup at the end of a run can be handled in about five minutes each. A hose connecting to the machine's vacuum pump will pick up any seed that has escaped during changeover. All machine movements are timed from a cam on the motor shaft. Sequence actions are actuated by five pull-type Namco Stellite-Welded solenoids.

Packets are fed from the magazine located beneath the discharge spout, are opened to receive the seed and then are forward through the gluing and sealing section for discharge from the machine. If any movement is not completed correctly the machine stops and a signal is sounded. The seal is solid across flap so there is no opening for seed to escape.

Dimensions are 60 by 30 by 62 inches. Standard equipment includes the self-contained assembly which needs connection only to a 110-volt 60-cycle power source, 10 sets of measuring cups of specified size, a magazine for 3¼ by 4¼-in. packets, a tray to receive the same size of filled packets and 1 gal. of glue. Additional measuring cups and packet magazines and trays for other packet sizes to 4½ by 6½ in. can be specified. List price of standard machine is $3,500.

BREVITY—Identify by IEN - 2864 If you write the maker

PRINTING . . Actinic inks in colors for photocopy printing work

Source: SANFORD INK CO.
2738-42 Washington St., Bellwood, Ill.

List price from
35 cents to $1.50

New line of inks in brown, green and black has been developed for use in a fountain pen for marking, writing, drawing in connection with printing operations in equipment such as Ozalid, Bruning and similar machines. The inks can be erased. They are opaque under exposure to actinic lights and produce strong sharp lines. Packaging is in 4-oz. bottles with a chamois pen-wiper, to ½-gal. bottles.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2865 If you write the maker

TRABON LUBRICATING EQUIPMENT Delivers a Measured Amount of Lubricant

- To Any Bearing . . .
- In Any Location . . .
- Under Any Condition

In the plant of Cans, Inc., Chicago, a Trabon system services 221 points of lubrication on this machine, which produces 310 cans per minute!

Since 1930 Trabon has been engineering, manufacturing, and installing centralized lubricating systems . . . for plain bearings, roller bearings, and ball bearings . . .

Since 1922 Trabon has been helping industry solve its lubricating and bearing problems.

Call Trabon in regard to your lubrication requirements.

Trabon
OIL AND GREASE SYSTEMS

TRABON ENGINEERING CORP.
1814 East 40th Street
Cleveland 3, Ohio

BREVITY—Identify by IEN - 2866 If you write the maker

Foundry maintains rigid control of annealing process

● Because the heat treatment of castings requires accurate timing, this Eastern producer installed a Cyclone Flat Wire Belt to carry them through the annealing operation. The regulated speed of the belt (by use of sprocket drive)—and its large open areas—allow the maximum amount of heat to reach all parts of the casting for exactly the right period of time. Just recently the original belt was replaced after several years' operation . . . definite proof that Cyclone belts give long service under rugged conditions.

Cyclone belts come in three types—Flat Wire, Chain Link and Flex-Grid. For information call or write our nearest sales office and ask for catalog #4.

CYCLONE FENCE DIVISION
(American Steel & Wire Company)
DEPT. C-31, WAUKEGAN, ILL.
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS CYCLONE
METAL CONVEYOR BELTS
UNITED STATES STEEL

BREVITY—Identify by IEN - 2867 If you write the maker

ONLY ONE MOVING PART..

A small, stainless steel valve that floats on the condensate load . . . keeps maintenance at a minimum. Continuous discharge under heavy loads, frequent under light loads, gets equipment hotter, sooner and keeps it hot. Over 600,000 Yarways already installed. Sold by distributors throughout the world.

YARWAY Impulse Steam Trap

YARNALL-WARING CO., 122 Mermaid Ave., Phila. 18, Pa.

BREVITY—Identify by IEN - 2868 If you write the maker

WHITNEY CHAIN

Takes the Problem out of your Power Drive Designs

Because Whitney Chains are extremely flexible and adaptable to a wide variety of designs, they meet practically all transmission requirements. Their positive grip delivers full power without slippage . . . assures uniform speeds. Their rugged construction and hardened-alloy-steel parts provide maximum service with low maintenance. Investigate Whitney Chains and Cut Tooth Sprockets . . . the *all steel drives* for your designs and equipment. Write:

WHITNEY CHAIN COMPANY
202 Hamilton Street Hartford 2, Connecticut

BREVITY—Identify by IEN - 2869 if you write the maker

Jacketed Pumps

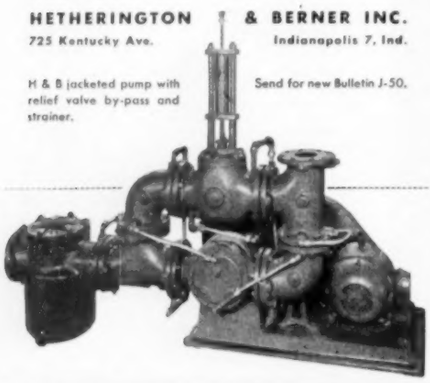
for handling viscous materials

Pumps for H & B Jacketed Systems are made especially for us to fit the flanges of H & B jacketed fittings. These pumps are engineered to provide maximum efficiency in handling viscous materials. H & B fittings are designed with a double wall forming an all-over jacket, completely insulating the interior line, with no dead spots or unprotected places.

HETHERINGTON & BERNER INC.
725 Kentucky Ave. Indianapolis 7, Ind.

H & B jacketed pump with relief valve by-pass and strainer.

Send for new Bulletin J-50.



BREVITY—Identify by IEN - 2870 if you write the maker

INCREASES TAP LIFE

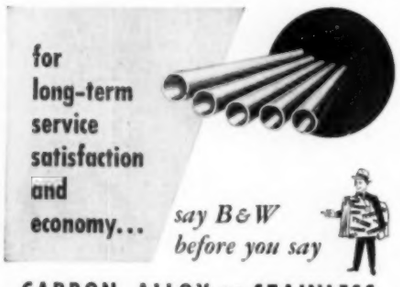
by Guided Accuracy

Quickly pays for itself on small-lot tapping operations. Insures accurately tapped holes, increases work output—practically eliminates tap breakage and removal. Has slotted base for fixtures. Special steel machined parts. Long spindle bearing provides accurate alignment and long life. Four hardened collets, furnished, handles standard tap shank sizes from No. 0 through ¼". Either right or left hand taps may be used. Finished in machine-tool gray. Write for circular.

$20.50 POSTPAID

H. D. HERDER TOOL SPECIALTIES
2724 E. MICHIGAN AVE.
KALAMAZOO, MICH.

BREVITY—Identify by IEN - 2871 if you write the maker



CARBON, ALLOY OR STAINLESS STEEL TUBING

for any Pressure or Mechanical Application

Call on your B&W Tube Representative. Because of his factory training in cost-saving "tube technics" . . . because he sells only tubular products . . . he may help you save time and trouble in obtaining your tubing requirements.

B&W SEAMLESS and WELDED TUBES

Write for latest literature

TA-1592-G

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Plants: Alliance, Ohio and Beaver Falls, Pa.
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NEW LITERATURE—Continued

"Are these in your catalog file?"

EXTINGUISHING . . Dry-chemical pressurized-tank fire extinguisher with 350-lb. capacity, wheel mounting; operation, detail specifications. "Model 350", 4 pages. American-LaFrance-Foamite Corp., 903 Erie St., Elmira, N. Y. **IEN-0278**

FASTENING . . Cartridge-power tool to drive into hard material; outline drawings on available pins or studs for steel, masonry. Folder, "Drive-It", 4 pages. Powder Power Tool Corp., 0717-21 S. W. Woods St., Portland 1, Ore. **IEN-0279**

FASTENING . . Cartridge-power tool to drive a pin or stud into hard material; outline drawings on available pins or studs for steel, masonry. Folder 35-A, 4 pages. Ramset Fasteners, Inc., 12120 Berea Road, Cleveland 11, Ohio **IEN-0280**

FASTENINGS . . "Holtite" slotted and Phillips-head machine screws, bolts, wood screws, nuts, tapping screws; sizes, dimensions, uses. Catalog 51, 100 pages. Continental Screw Co., 700 Mt. Pleasant, New Bedford, Mass. **IEN-0281**

FEEDING . . Chemical proportioning equipment; condensed data on 51 pieces of literature available from the company on this subject and its equipment. Bulletin CAT, 6 pages. Proportioneers, Inc., 384 Harris Ave., Providence 9, R. I. **IEN-0282**

FOUNDRY EQUIPMENT . . Series-3000 jolt pin lifters for foundry flasks; construction points and specifications on six models, 750 to 4,000 pounds. Bulletin 30, 4 pages. SPO, Inc., 6452 Grand Division Ave., Cleveland 5, Ohio **IEN-0283**

GENERATORS . . Steam turbine-electric generator units of 500 kw. and up; pictures of about 50 installations, cooling arrangements, data on standard units. Bulletin H-18, 40 pages. Elliott Co., 49 Kealey St., Jeannette, Pa. **IEN-0284**

GRINDING . . Hanchett-type vertical-spindle surface grinding machines for production use; specifications on four models, typical uses. Bulletin 847-2RM, 10 pages. Mattison Machine Works, 543-47 Blackhawk Park Ave., Rockford, Ill. **IEN-0285**

HANDLING . . Sling chains of wrought iron; standard sizes of single and double units, recommended load limit tables, suggestions on use. Folder SC-48, 4 pages. Cleveland Chain & Mfg. Co., Henry & Broadway, Cleveland 5, Ohio **IEN-0286**

HANDLING . . "Nesteel" pressed-steel pallets for four-way truck entry and with slots for strapping; illustrated application points. Bulletin X-100, 6 pages. Powell Pressed Steel Co., 50 Industrial Blvd., Hubbard, Ohio **IEN-0287**

HARD FACING . . Suggested welding procedure in the form of eight steps to hard-surface parts of manganese steel. Reprint, "Hard Surfacing Manganese Steel", 4 pages. Rankin Mfg. Co., 3070-74 W. Pico Blvd., Los Angeles 6, Calif. **IEN-0288**

HEAT TREATING . . Model-CF furnace, gas or electric, for temperature to 850 deg. F.; sectional view to show circulation, specifications. Bulletin 84, 6 pages. Despatch Oven Co., 617-21 S. E. 8th St., Minneapolis 14, Minn. **IEN-0289**

HEAT TREATING . . Series-H Homocarb electric furnace with Microcarb atmosphere control; construction points and a cut-away illustration. Catalog T-623-1, 4 pages. Leeds & Northrup Co., 4934 Stenton Ave., Philadelphia 44, Pa. **IEN-0290**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2872 if you write the maker

A News Advertisement by Kollmann Mfg. Co.

CLEANS DRAIN AND SUPPLY LINES

. . . Advanced design machine features instant-acting clutch and sectional cables for fast, SAFE operation by one man. Cuts maintenance costs and "down" time.

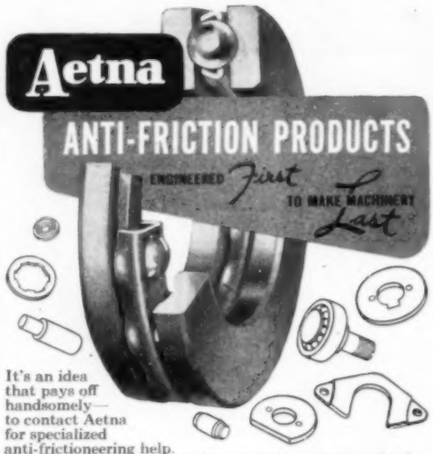
This fully portable, electric power machine is ideal for clearing obstructions from underground or overhead drains and supply lines. Adaptable to 4 cable sizes and to all pipe sizes from 1¼" to 12". Handles up to 200' of cable at 700 R.P.M. **under instant control.**

Convenient 15' sections of tempered steel cable, couple and lock instantly and are enclosed by guide hose. There is no unwieldy cable length to damage operating area or injure operator.

Patented instant-acting clutch provides finger tip control for starting, stopping and reversing. Cutters and cables clear any combinations of traps, ells and bends in sewer or industrial drains, conductor lines, concealed or exposed downspouts and supply lines. Easily carried and operated by one man, machine can be passed through an opening 14 by 22 inches and needs only 3 sq. ft. of floor space. Quickly pays for itself through reduced maintenance costs and less out-of-service time. For full details and name of nearest distributor, write Kollmann Manufacturing Company, 4850 Peach St., Erie, Pa., or use the enclosed Reader Service Form.

KOLLMAN MANUFACTURING CO.
4850 Peach Street, Erie, Pa.

BREVITY—Identify by IEN - 2873 if you write the maker



It's an idea that pays off handsomely—to contact Aetna for specialized anti-frictioneering help.

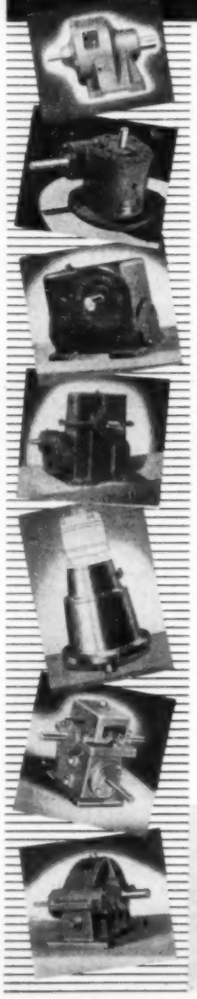
Aetna engineers will gladly work with your organization in confidence—in the unbiased selection of standard bearings or in the design of special bearings or precision parts for unusual applications. Facilities for sizes up to 38" O.D.—for microscopy, physical testing and metallurgical laboratory services. Write today!

AETNA BALL AND ROLLER BEARING COMPANY
4600 SCHUBERT AVENUE • CHICAGO 39, ILLINOIS

Standard and Special Ball Thrust Bearings • Angular Contact Ball Bearings • Special Roller Bearings • Ball Retainers • Hardened and Ground Washers • Sleeves • Bushings • Miscellaneous Precision Parts

BREVITY—Identify by IEN - 2874 if you write the maker

Shorten the interval between design and assembly line with WINSMITH Standardization



Huge military and domestic needs place increased emphasis on design speed-ups and production simplification.

This calls for maximum standardization. One way to achieve it, where power transmission problems are involved, is with Winsmith speed reducers. For, no matter how individual the purpose, how specialized the function, how complex the design and production problems, most requirements can be served with standardized Winsmith reducers.

With industry's widest range of standard designs and sizes from fractional to 85 H.P., Winsmith can meet your normal and special demands . . . can help you shorten the interval between machine design and assembly line.

And a Winsmith power transmission engineer in your locality is available for consultation.

DESCRIPTIVE FOLDER, "Save through Standardization," will aid in your selection. Write.

WINFIELD H. SMITH CORPORATION
30 Davis Street
Springville (Erie County), N. Y.

50th WINSMITH SPECIALTIES ANNIVERSARY

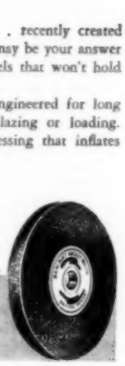
WINSMITH SPEED REDUCERS

BREVITY—Identify by IEN - 2876 if you write the maker

ANOTHER BANCROFT-HICKEY ORIGINAL . . . recently created for a leading producer of industrial bearings, may be your answer too — if your production is crippled by wheels that won't hold their form.

This superior wheel of organic bond is engineered for long service — yet breaks away before excessive glazing or loading. It *holds* its form, thus minimizing the redressing that inflates diamond costs and robs operator efficiency.

Whatever your grinding operation, use the wheel correct in grade and grain for the job. Use a Bancroft-Hickey original and get performance as individual as a thumb-print.



BANCROFT-Hickey
MANUFACTURING COMPANY
BRISTOL, PA.

BREVITY—Identify by IEN - 2877 if you write the maker

PANGBORN Hydro-Finish gives better tool room results . . .

in a fraction of the time!

SIMPLIFY the manufacture and maintenance of tools, dies and molds with versatile Pangborn Hydro-Finish. It reduces usual costly handwork and produces a surface virtually free from directional grinding lines.

And on the production line, use Hydro-Finish to eliminate many tedious finishing operations. It reduces cost and time involved in buffing. It lessens fatigue failure and cuts manufacturing costs.

Hydro-Finish is the new, versatile impact blasting process that uses a fine mesh abrasive suspended in water. Tolerances are held to .0001 of an inch.

FIND OUT TODAY how Hydro-Finish can pay off for you. Write for Bulletin 1400-A to PANGBORN CORPORATION, 2300 Pangborn Blvd., Hagerstown, Maryland.

Look to Pangborn for the latest developments in Blast Cleaning and Dust Control.

Pangborn
BLAST CLEANS CHEAPER
with the right equipment for every job

BREVITY—Identify by IEN - 2879 if you write the maker

LUBRICATING . . Three wheel cart and equipment to dispense grease, oil

Source: GRAY CO.
50 Graco Square, Minneapolis 13, Minn.

Two models are available in the company's new Lube Service Cart. One dispenses grease from a bucket-type unit that holds 20 pounds. The other pumps from a 25 to 40-lb. refinery-filled pail. Each has a 10-ft. high-pressure hose and control valve. Also included on the cart are an oil pump in a 2-qt. container with a 10-ft. dispensing hose and gun, a 1-lb. lever gun and a ½-pt. pistol oiler.

Hooks on the handle keep hoses off the floor. Mounting is on two 10-in. rubber-tired wheels and a removable front caster. The front of the cart has a hinged-cover storage space for tools, adapters, wipers.

BREVITY—Identify by IEN - 2880 if you write the maker

ADHESIVE . . Resin base cement installs tile, wallboard, fiberboard

Source: W. S. McGUFFIE & CO.
3402 Theurer Court, Cleveland 9, Ohio

For plaster concrete, metal glass, wood

Sur-Stik is a new cement supplied in mastic form, particularly for installation on the new acoustical tiles and wallboards employed in building construction. The material remains permanently pliable and is waterproof. It will bond to a range of building materials to insure permanent installation of the tile on its mounting surface.

BREVITY—Identify by IEN - 2881 if you write the maker

MARKING . . Rubber stamp, curved printing face, rocking action

Source: LOUIS MELIND CO.
360-64 W. Chicago Ave., Chicago 10, Ill.

Rock-A-Stamp is a new rubber stamp in which rubber dies, to a maximum of 8 by 12 in., are mounted on a backing pad equipped with a handle to rock an impression onto a surface. The stamp applies with an inking pad. Five standard widths measure 3 to 8 inches. Because of the cylindrical face only a small part of the pad touches the surface being printed at any one time so large impressions can be made without more than normal hand pressure.

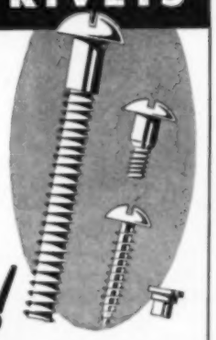
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2882 if you write the maker

Beaver·Bilt
SCREWS
STUDS · RIVETS

Standard and Special Types Made for Your Particular Requirements

COLD HEADING PROCESS



Prompt Delivery!

URGENT ORDERS GIVEN SPECIAL ATTENTION
WIRE OR WRITE US ABOUT YOUR NEEDS

Beaver Industries
METAL FASTENER DIVISION
1500 WEST ADAMS STREET, CHICAGO 7, ILL

BREVITY—Identify by IEN - 2883 if you write the maker

A GREAT NEW POWER BLADE

with
• GREATER SAFETY — Shatterproof, Extra Strong Body, Practically Unbreakable
• GREATER PRODUCTIVITY — High Speed Steel Welded Edge for More, Straighter Cuts Per Blade

Starrett® SAFE-FLEX® HIGH SPEED WELDED-EDGE POWER HACKSAW BLADES

"DOUBLE WELDED STEEL CONSTRUCTION"

an entirely new development in blade design, makes this the safest, straightest cutting, most durable blade you've ever tried. Its hard, high speed steel cutting edge is integrally welded to a medium hard, extra strong steel center also welded to a super tough steel back. Result is a far stronger blade with a perfect balance between hardness and toughness that makes the Starrett SAFE-FLEX cut straighter, completely shatter-proof and ideal for heavy feeds and rugged jobs such as interrupted cuts and sawing multiple work.

Let your safety engineer prove it for himself. Order some Starrett SAFE-FLEX Welded Edge Power Blades today.

There's a Starrett Blade for Every Job—S-M Molybdenum, High Speed Tungsten 18-4-1, Safe-Flex, Standard—Hand and Power Sizes

Write for complete information. • Address Dept. "N"

Starrett
Standard of Precision
BUY THROUGH YOUR DISTRIBUTOR
THE L. S. STARRETT CO. · Watch's Greatest Toolmakers · ATHOL, MASSACHUSETTS · U. S. A.

BREVITY—Identify by IEN - 2884 if you write the maker

DE-STA-CO Proves "GOOD THINGS COME IN THREES"

But rarely three as useful as these NEW De-Sta-Co Toggle Clamps. All three answer specific needs for fast clamping and positive holding pressures in production operations — welding, riveting, banding, machining and assembly. Whatever your product, for efficient, low cost tooling, consider:

MODEL 235U, top, Retractable work-holding bar for quick, unimpeded loading and unloading of fixtures. Up to 750 lb. pressure.

MODEL 474, left; Portable Plier Clamp, a "baby" for one-hand use in cramped work areas. Deep jaw capacity altho only 4½" over all.

MODEL 650, right; Plunger Clamp for heavy duty "push-pull" work-holding requirements. Compact design, develops up to 4000 lbs.

For details on these and over forty other De-Sta-Co Toggle Clamps write for catalog and name of stocking representative near you.

DE-STA-CO DETROIT STAMPING COMPANY
342 MIDLAND AVE. • DETROIT 3, MICH.

BREVITY—Identify by IEN - 2885 if you write the maker

TEMPILSTIKS®

the amazing Crayons that tell temperatures

in
WELDING
FLAME-CUTTING
TEMPERING
FORGING
CASTING
MOLDING
DRAWING
STRAIGHTENING
HEAT-TREATING
IN GENERAL.

it's this simple:
• Select the Tempilstik® for your working temperature.
• Mark your workpiece with it.
• The Tempilstik® will leave a liquid mark as soon as its specified temperature is reached.

Available in these temperatures (°F)

113	213	313	450	850	1250	1650
125	225	325	500	900	1300	1700
138	238	338	550	950	1350	1750
150	250	350	600	1000	1400	1800
163	263	363	650	1050	1450	1850
175	275	375	700	1100	1500	1900
188	288	388	750	1150	1550	1950
200	300	400	800	1200	1600	2000

Also available in pellet and liquid form.

$2 each — gives up to 2000 readings

TEMPIL CORPORATION
132 W. 22nd St., New York 11, N. Y.

FREE—Tempil® "Basic Guide to Ferrous Metallurgy" —16½" by 21" plastic laminated wall chart in color. Send for sample pellets, stating temperature of interest to you.

NAME _____
COMPANY _____
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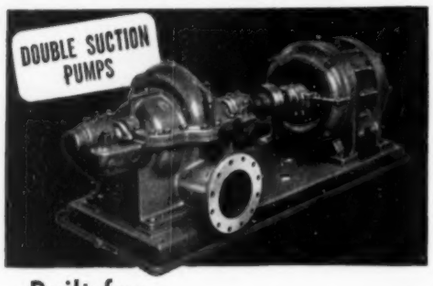
BREVITY—Identify by IEN - 2886 if you write the maker



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LOW MAINTENANCE

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COMPACT, EFFICIENT, LONG LIFE ELECTRIC HEATING UNITS

CURVED, FLAT and CYLINDRICAL SHAPES

Available in standard and special shapes in diameters, widths and capacities to fit many types of heated production devices. Accurately formed for precise fit to assure maximum heating efficiency. Cylindrical and band units in separate segments or hinged to fit around specific diameters.

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From 2" diameter circles 1¼" wide on up. 9" diameter bands 12" wide and up. Semi-circles 1½" to 7" wide, 1½" to 12" radii. Up to 7000 W.

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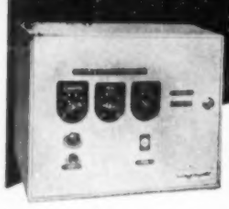

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Stops over-count losses and under-count complaints
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Send case histories showing economies effected by Monitor Batch Counters.

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MB-4

NEW LITERATURE—Continued

"Size and designation are included"

HEATING . . Gas-burning unit heaters and room heaters; capacity tables, cut-away construction points, dimensional drawings, controls. Catalog 195, 32 pages. General Gas Light Co., 203 N. Park St., Kalamazoo, Mich. **IEN-0291**

HEATING . . Gasoline-burning truck cab heaters, truck cargo heaters, portable heaters, cargo coolers; descriptions, dimensions, condensed data. "Heater", 4 pages. Hunter Mfg. Co., 1548-52 E. 17th St., Cleveland 14, Ohio **IEN-0292**

HEATING . . Electronic induction equipment for soldering and brazing metal parts; specifications on Type 1-AL unit, typical uses. Bulletin 1-J-1797-RE, 4 pages. Radio Corp. of America, 1941 Front & Cooper Sts., Camden 2, N. J. **IEN-0293**

HOSE FITTINGS . . Reusable hose couplings in ratings to 5,000 lb.; illustrated assembly instructions, sizes, ratings, adapters, suggestions on use. Catalog H-1451-A, 20 pages. Weatherhead Co., 302 E. 131st St., Cleveland 8, Ohio **IEN-0294**

INSULATING . . Hard-maple wood wedges for electrical windings; standard types and sizes with sectional drawings, specials. Bulletin 280, 4 pages. Insulation Manufacturers Corp., 563-67 W. Washington Blvd., Chicago 6, Ill. **IEN-0295**

JACKS . . "Porto-Power" hand hydraulic pump and ram assembly to push, pull, lift, press, bend, clamp; standard units, attachments, uses. Catalog P-50, 32 pages. Blackhawk Mfg. Co., 5323-27 W. Rogers St., Milwaukee 1, Wis. **IEN-0296**

JACKS . . Ratchet, screw, hydraulic, power jacks in a range of designs; illustrated data summaries including ratings and list prices. Bulletin 203-A, Second Edition, 4 pages. Duff-Norton Mfg. Co., Box 1889-A, Pittsburgh 30, Pa. **IEN-0297**

JACKS . . Hand hydraulic pump with hose connection to a ram; standard units, accessories, also standard jacks and pulling tools. Bulletin, "Hydraulic 51", 8 pages. Templeton, Kenly & Co., 1012 S. Central Ave., Chicago 44, Ill. **IEN-0298**

LAYOUT . . Scale-model machines, equipment, furniture to use in plant layout and planning; 22 by 17-in. reproduction of a layout. "Wasted Time", 8 pages. Visual Planning Equipment, River Road & Pennsylvania Ave., Oakmont, Pa. **IEN-0299**

LIGHTING . . Small portable fluorescent unit with vapor-tight shatterproof housing 1½ and 2 in. o.d.; list prices, uses. Bulletin 4, 2 pages. Commercial Reflector & Mfg. Co., 3111 Maple Ave., Los Angeles 11, Calif. **IEN-0300**

LUBRICATING . . Equipment to handle grease and oil from barrel to bearing; illustrated summary sheet with notes on equipment. Folder 22-146-2, 4 pages. Alemite Div., Stewart-Warner Corp., 1828 Diversey, Chicago 14, Ill. **IEN-0301**

LUBRICATING . . Lead-base materials for gears, wire rope, hydraulic equipment, heavy machinery; condensed data on properties and uses, company history. Bulletin, 24 pages. Brooks Oil Co., 932-36 Ridge Ave., Pittsburgh 12, Pa. **IEN-0302**

LUBRICATING . . "Micro-Fog" equipment for machine lubrication such as pneumatic cylinders, valves, tools; operation, standard models. Folder 425, 4 pages. C. A. Norgen Co., 220-24 Santa Fe Drive, Denver 9, Colo. **IEN-0303**

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A News Advertisement by Robinson Ventilating Co.

VENTILATING . . Centrifugal blower for exhaust service, 420 to 60,400 cfm.

Type-AE designates new single-inlet centrifugal exhaust blower fabricated from steel plate in welded assembly. The impeller is mounted on a cold-rolled steel shaft supported in self-aligning ball bearings. Drive can be arranged for direct or belt-connected motor on the box-type bearing base at the side of the blower housing.

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SINGLE UNIT time, temperature and motor CONTROL FOR LAUNDRY DRYERS

Combines heating and timing controls in a single unit. Handles both motor and electrical heating circuits. Amount of moisture and weight of clothes scientifically determine length of time dryer operates to automatically produce degree of dryness desired by operator. Control cuts heat switch when correct internal temperature is reached, but motor continues to run until all stored heat in drying chamber has been utilized.

Economical to install—produces maximum operating efficiency of appliance. Write for information.

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TO YOUR SPECIFICATIONS

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We manufacture the wire cloth, thus insuring its accuracy; we also do all the necessary cutting, forming, soldering, stamping, punching, welding and seaming. In other words, it's a NEWARK job from start to finish.

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WHETHER for general, commercial or industrial lighting, you'll get new efficiency and new savings with Lustra Fluorescent Lamps.

Lustra Fluorescents are unsurpassed for long life, high light output, and high *maintained* brightness throughout the life of the tubes. And Lustra's superior coatings give more evenly-diffused light from end to end. Color characteristics are dependably uniform . . . replacements always identical.

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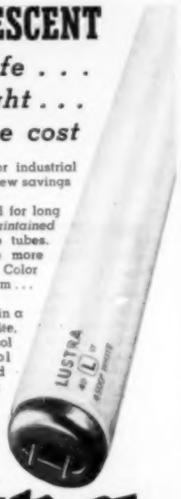

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Drop this precision bearing into an inner foil-kraft bag . . . heat seal it . . . that's *all*. You've protected it against rust and dirt. When and where the bag and outer carton are opened . . . even years later . . . the bearing will be factory perfect. Ready for immediate use.

Experts in automotive packaging pioneered many aluminum foil uses. One of the leading companies went over to foil for better protection—and was able to replace a complicated six-step operation with the simple foil-kraft bag and carton you see above!

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HEATING . . Dielectric equipment to preheat plastic molding compounds

Source: W. T. LA ROSE & ASSOCIATES INC.
644-1 Second Ave., Troy, N. Y.

Model 50 designates new dielectric plastic-rubber preheater with capacity to heat 5 lb. of compound per minute and to take a total of 14 lb. per charge on its 12 by 12-in. electrode. The electrode opening is adjustable between 1 and 4½ inches. Electric control can be set for a heating interval to 3 minutes. The machine takes 28 by 23 in. of floor area. It lists at $4,775.

Operation can be specified on 220 or 440-volt, 60-cycle, three-phase ac. with output rating at 7 kw. It is estimated that operating and owning cost is 45 cents per hour on tests made by the company. The unit is assembled in a structural frame enclosed in sheet steel and mounted on casters. Weight is 625 pounds.

BREVITY—Identify by IEN - 2897 if you write the maker

TESTING . . Portable instrument indicates combustible gas concentration

Source: LOR-ANN INSTRUMENT CO.
56-60 Montgomery St., Jersey City 2, N. J.

Instrument itself is explosion-proof

Cylindrical housing measuring 5½ in. in diameter by 6½ in. in height encloses a Wheatstone bridge circuit. The platinum-coil heating elements indicate the presence of combustible gases and compensate for temperature changes and drift in the Type-D dry cell batteries which supply power to the instrument. A user carries the unit with the aid of a neck strap. He draws in a sample of atmosphere gas by operating a bulb that connects by a length of neoprene hose to the housing.

The combustible portion of the gas burns in the combustion chamber in the presence of one of the two incandescent coils. The resulting unbalance in the Wheatstone bridge circuit is recorded on a dial at the top of the instrument in terms of gas concentration. Type Ep-200 is the designation. Weight of the new instrument is about 6 pounds.

BREVITY—Identify by IEN - 2898 if you write the maker

BULLETIN BOARD . . Mounts on wall, cork composition face for tacking

Source: BECKLEY-CARDY CO.
1630-34 S. Indiana Ave., Chicago 16, Ill.

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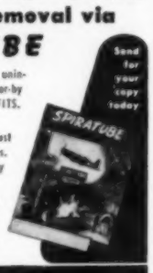
BREVITY—Identify by IEN - 2899 if you write the maker

. . . cut equipment down-time—DOWN with pin-point dust-removal via durable *SPIRATUBE*

Abrasive dust constantly wages war against the profitable, uninterrupted operation of grinders, buffers, polishers, and near-by machine-tools. It bites into bearing surfaces—and PROFITS. But it can be licked.

Efficient, light-weight, Spiratube chases, and captures dust . . . around corners, into pockets, hard-to-get-at places. Cushioned construction rides with the punch of high-velocity abrasive particles . . . lasts and lasts.

This BETTER tubing is portable, easy to install. Initial cost is small, maintenance cost practically nil . . . adds up to an all-time low in cost-per-year of efficient dust-removal, and it fits into present systems. Standard sizes immediately available from well-stocked distributors—Coast-to-Coast.



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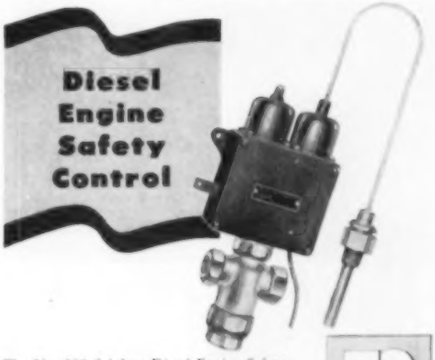

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Simple • Self-operated
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PRECISION THREADING

No. 902 "RAPIDUCTION" BOLT MACHINE

● Production threading of bolts, pipe, nipples, etc., is performed on this machine. Two spindle speeds obtained without change of sheaves due to multi-speed motor. Automatic tripping and re-setting device for die-head and lead screw eliminates the "human element" in determining the exact moment the die-head should be opened and lead screw disengaged to obtain desired length of thread. No. 902 "RAPIDUCTION" has a standard bolt range N.C. ½" to 2"; 12 pitch or finer ½" to 2¼". Pipe or nipple range ⅛" to 2". Complete details on request.

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the most complete line of
INDUSTRIAL TRUCKS
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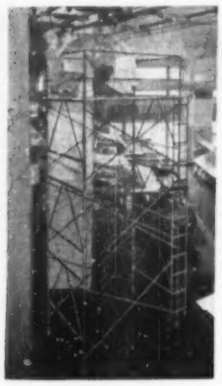

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Repairs and maintenance at any level can be handled better, faster and safer with these steel work towers . . . stationary or equipped with locking casters. Standard parts are quickly assembled to any required height and size, and may be re-used in other combinations. *Safway equipment is sold and rented by leading distributors.*

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- ★ Full force-feed lubrication of all working parts
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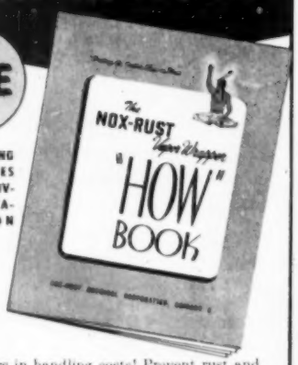

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NEW LITERATURE—Continued

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LUBRICATING . . Hydraulic-type grease lubricant fittings; specifications on a range of designs, also bushings, installation tools, guns. 1951 Catalog, 14 pages. Universal Lubricating Systems, 785 Allegheny Ave., Oakmont, Pa. **IEN-0304**

MANAGEMENT . . Organization chart in interchangeable design to take typed name inserts; description, examples of standard and special units. Folder, 4 pages. Management Control Charts Co., 1729-33 N. Wells St., Chicago 14, Ill. **IEN-0305**

MANAGEMENT . . Consulting service for plant management in labor utilization, plant methods, expense and inventory control; examples. Booklet, 16 pages. Work-Factor Co., 366 Madison Ave., Rm. 633, New York 17, N. Y. **IEN-0306**

MARKING . . "Flo-Master" fountain-type marking brushes; illustrated types, color chart on inks, accessories, also clip board, key file. Catalog 51, 12 pages. Cushman & Denison Mfg. Co., 153 W. 23rd St., New York 11, N. Y. **IEN-0307**

MOTORS . . Squirrel-cage induction motors, 900 hp. and up; cut-away view accompanied by a detail description on construction features. Bulletin 05-B-7550, 6 pages. Allis-Chalmers Mfg. Co., 900 S. 70th St., Milwaukee 14, Wis. **IEN-0308**

PIPE FITTINGS . . Flexible ball joints in a range of designs for service to 1,000 deg. F. and pressures to 6,000 lb.; construction, sizes, uses. Catalog 215-J-20, 16 pages. Barco Mfg. Co., 1803 Winnemac Ave., Chicago 40, Ill. **IEN-0309**

PLASTICS . . Molded parts in small lots made by the company's service; dimension drawings and production cost figures on seven examples. Folder 242, 4 pages. Dayton Rogers Mfg. Co., 2822-26 13th Ave. S., Minneapolis 7, Minn. **IEN-0310**

POWDER METAL PARTS . . General information on their properties and production, dimensions on stock bearings and gears, metals. Bulletin, 12 pages. Powdered Metal Products Corp., 9333-37 W. Belmont Ave., Franklin Park, Ill. **IEN-0311**

PRESS TOOLS . . Punch-and-die units with holders for multiple-hole sheet punching; typical parts, complete assemblies, illustrated steps. Brochure M, 8 pages. Wales-Strippit Corp., 361 Payne Ave., North Tonawanda, N. Y. **IEN-0312**

PROCESSING . . Banbury mixer for rubber and similar materials; notes on new points in design, table of sizes on 11 standard models. Bulletin 500-5, 4 pages. Farrel-Birmingham Co., 146-50 Maple St., Ansonia, Conn. **IEN-0313**

PROCESSING . . Impregnating equipment to seal, bond or disinfect products; description, standard sizes on the vacuum pump and tank employed. Bulletin 501, 4 pages. Lammert & Mann Co., 1751-55 Walnut St., Chicago 12, Ill. **IEN-0314**

PROTECTING . . Transparent-plastic shields with permanent-magnet holders for machine use; sizes and list prices, examples of use. "Magnetic Grip Shields", 4 pages. Dilley Mfg. Co., 1654-58 Ansel Road, Cleveland 6, Ohio. **IEN-0315**

PROTECTING . . Equipment for atomic energy work to protect against radioactive or toxic materials; illustrated data summaries. Bulletin G-10, 8 pages. Mine Safety Appliances Co., 21 Braddock Ave., Pittsburgh 8, Pa. **IEN-0316**

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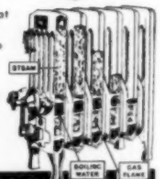

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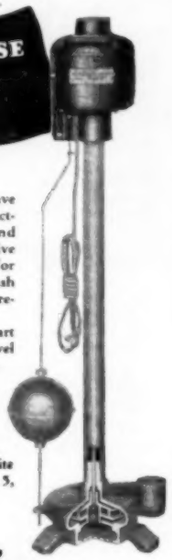
119 West 40th Street New York 18, N. Y.

BREVITY—Identify by IEN - 2910 if you write the maker

FAIRBANKS-MORSE INDUSTRIAL SUMP PUMPS



Handy, dependable. Save thousands of dollars by protecting machinery, merchandise and buildings from damage by excessive seepage and flash floods. Ideal for use in boiler and elevator pits, ash dumps, machinery base pits, storerooms, and many other places.

Fairbanks-Morse sump pumps start when water reaches pumping level ...shut off when danger is passed. Can be left unattended. Made for 2-foot sump pits. Extension columns available when settings require them. For complete details of sizes, construction features, pumping capacities and prices, write Fairbanks, Morse & Co., Chicago 5, Illinois.

FAIRBANKS-MORSE,

a name worth remembering

DIESEL LOCOMOTIVES AND ENGINES • ELECTRICAL MACHINERY • PUMPS • SCALES
HOME WATER SERVICE AND HEATING EQUIPMENT • RAIL CARS • FARM MACHINERY

BREVITY—Identify by IEN - 2911 if you write the maker

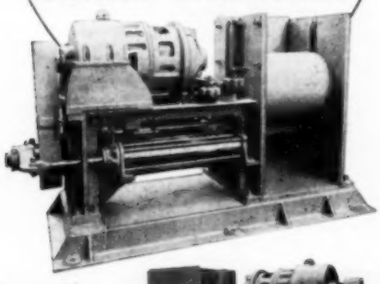
Salvage

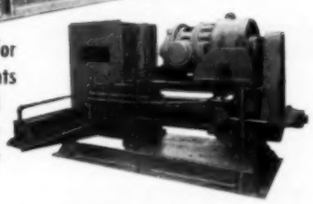
ALUMINUM · STEEL
BRASS · COPPER
LEAD or WIRE

Faster, More Economically

The New

McLanahan SCRAP BUNDLER





Designed for use in plants of small or large capacity

If your metal scrap or wire is of a stringy nature, you need the new McLanahan scrap bundler for use with your slitting equipment. This new machine, the result of constant research and product development, quickly and economically bundles metal scrap into cylinders approximately 16" to 18" in diameter. Easy to handle, ship, store or remelt . . .

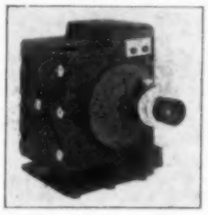
Write Today for Descriptive Bulletin

McLANAHAN and STONE Corp.
Hollidaysburg, Pa. SINCE 1835

BREVITY—Identify by IEN - 2913 if you write the maker

PHOTOGRAPHING . . Motion camera to record separate simultaneous events

Source: FLIGHT RESEARCH ENGINEERING CORP.
P. O. Box 1-FI, Richmond 1, Va.



Model IV is a new 35-mm. synchronous motion picture camera that has been developed to photograph motions or events taking place simultaneously at separate locations where it is not possible to photograph all of the action on one film. Two or more of these cameras are set up in parallel wired gangs and are employed for single-frame or continuous exposures by actuation at a predetermined control point. Each camera takes 35-mm. film and is driven by a 1/100-hp. synchronous motor which is standard for operation on 3-phase, 110-volt, 400-cycle ac.

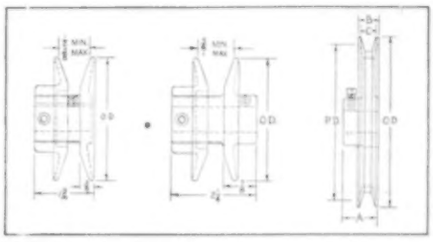
Typical application, in connection with automatic control of a process involving, for example, liquid level would employ three cameras. One would photograph an instrument panel, another a power-operated valve and a third the actual liquid level. The resulting film could be employed to study time lag in the process between actuation and actual level change. By using a simple motor-operated interval timer to energize the parallel clutch line, single frames can be taken at any predetermined time interval.

Continuous operation over a 26-hr. interval can be maintained with the timer set for one pulse per minute. The assembly includes incandescent and argon coding and timing marker lamps, change gears for speed of 5, 10 and 20 or 4, 8, 16 and 32 frames per second.

BREVITY—Identify by IEN - 2914 if you write the maker

DRIVE . . V-belt sheaves in adjustable pitch and solid designs

Source: CLIMAX FLEXIBLE COUPLING CO.
861-65 E. 140th St., Cleveland 10, Ohio



Cast iron is employed in manufacture of this new line of adjustable-pitch and non-adjustable V-belt sheaves. Sizes range from 2¾ to 7 in. in outside diameter for the adjustable units and stock assemblies are available for "O," "A" and "B" belts. Two designs apply a set screw for the shaft in the center and on an end hub. Stock bore is ¼ to ⅝ in. in sizes to 4 in. in outside diameter. It is ½ to 1 in. in the larger units.

The non-adjustable design is in stock in outside diameters from 6 to 12.2 in. and in bore from ½ to 1 in. in $\frac{1}{16}$-in. increments the same as in the adjustable design. This sheave takes "A" belts and is a spoke-type unit.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2915 if you write the maker

Puts new light on "visibility"

—the crystal clear plastic front with clean, rounded edges floods the scale with unobstructed natural light. The dial sets well up into the translucent cover, permitting full natural lighting from the top, sides and bottom. (No bezel or case rim interrupts light from any angle.)

—Another advantage—the full, open dial on this new 3" instrument gives much longer scale length than on conventional three-inch meters, yet the mounting and panel space is exactly the same.

—Your name or trademark can be shown with colorful emphasis.

Now—with competition getting keener—is a good time to improve your panels. Take a look at Model 321 PL soon.

FOR THE MAN WHO TAKES PRIDE IN HIS WORK
Triplett

TRIPLETT ELECTRICAL INSTRUMENT CO., BLUFFTON, OHIO, U.S.A.

BREVITY—Identify by IEN - 2916 if you write the maker

Tape triples life of work gloves!

In the picture above, *Polyken* tape No. 133 is being used to triple the working life of a work glove! Mather Spring Company used to mend its 15,000 pairs of workers' gloves by hand sewing. Now *Polyken* No. 133 does the job faster, easier, better! Sticks to any surface as well as its own. Resists abrasion, solvents, and moisture.

Ask your *Polyken* distributor or write for free folder, "Tape is a Tool." Address *Polyken*, Dept. IEC, 222 W. Adams St., Chicago 6.

ONE OF THE NEW...
Polyken® INDUSTRIAL TAPES
TAILORED TO YOUR JOB

POLYKEN Industrial Tape, Department of Bauer & Black, Division of The Kendall Company

BREVITY—Identify by IEN - 2917 if you write the maker

Improved Method Centrifugal SPRAY DRYER *and* CONCENTRATOR*

Complete information on improved centrifugal Spray Dryer, illustrated with photographs and engineering design drawings.

THE DRYING AND CONCENTRATING COMPANY DRYER

Improved method for **DEHYDRATING**

Solutions, emulsions and materials which can be handled in a liquid form including:

Chemicals
Pharmaceuticals
Milk Products
Blood or Blood Plasma
Soups, Vegetables, etc.

This complete spray drying plant employs a unique centrifugal-type spray head, and consists of a Drying Chamber, Concentrator, Air Heating Unit, Air Filter, Air Supply Fan, Powder Cooler and Sanitary Pumps with variable speed drives for handling the liquid material and controlling the moisture.

***CONCENTRATOR AVAILABLE SEPARATELY**

The Concentrator can be operated as a separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining neutral flavors and vitamins.

Ad No. 348

DRYING and CONCENTRATING CO.
232 SOUTH MICHIGAN AVENUE, CHICAGO ILLINOIS

BREVITY—Identify by IEN - 2918 if you write the maker

UNLOADING TIME CUT 60% WITH *BAKER TRUCK*

National Lock Company has been using Baker Trucks successfully for ten years. In 1950 the company purchased its ninth Baker Truck—a Type FT (100% functional) 3000 lb. Fork Truck—to unload incoming coils of steel from trailers.

The new truck has achieved the following:

1. Made it possible to order coils from the mill weighing 1100 lbs. instead of 250 lbs.
2. Fewer trips because of larger coils.
3. Easier stacking in storage and placing at machines.
4. Unloading time cut 60%—more for big coils.
5. Reduced turn-around time for trailers.
6. Less space required at loading dock.

This truck is a "truck-loading" model with nested overall height 69", initial lift 49" and telescoping lift 98"—permitting easy entry into trailer bodies, and high stacking in storage.

A Baker Material Handling Engineer can show you how to make similar savings.

BAKER INDUSTRIAL TRUCK DIVISION *of The Baker-Raulang Company*
1245 West 80th Street • Cleveland 2, Ohio

Baker INDUSTRIAL TRUCKS

BREVITY—Identify by IEN - 2919 if you write the maker

FAFNIR Ball Bearing
Power Transmission Units

THE FAFNIR BEARING COMPANY
NEW BRITAIN, CONN.

FAFNIR BALL BEARINGS
MOST COMPLETE LINE IN AMERICA

BREVITY—Identify by IEN - 2920 if you write the maker

IMPORTANT DATA ON
UNIVERSAL
Flexible **METAL HOSE**
for conveyance of gases, liquids, semi-solids, dust, etc.—for moisture-proof armored conduit and control casings—and many other applications.

Write for
CATALOG U-101 — Just Published

UNIVERSAL METAL HOSE CO.
2131 South Kedzie Avenue Chicago 23, Illinois

BREVITY—Identify by IEN - 2921 if you write the maker

KEYWAYS
A PENNY APIECE
says R. L. Beekman, Manager
Beekman Engineering Co., Ft. Lauderdale, Fla.

"We have been using Minute Man Broaches, cutting ¼" x 2¼" keyways in cast iron worm gears and cams. One broach has cut over 500 keyways and is still sharp and in good condition. The du Mont method is faster and better in every way."

du Mont Minute Man Kits cut keyways from 1/16" to 1" wide in bores from ¼" to 3" by 1/16" steps. They do the job, by hand, *in one minute!*

MAIL THIS COUPON

The du MONT CORPORATION, Greenfield, Mass.
Please mail Minute Man Descriptive Folder and Price List "N"

Name .....
Company .....
Address .....

NEW LITERATURE—Continued

"Facts on literature about a product"

PULVERIZING . . Ring-roll mill machines to pulverize hard or soft materials in range of 6 to 200 mesh; cut-away view, description, capacities. Bulletin 079, 4 pages. Sturtevant Mill Co., 51 Harrison Square, Boston 22, Mass. **IEN-0317**

PUMPS . . "Powerflo" pneumatic units to apply direct in material drums; operation, models, typical illustrated uses in spraying a variety of materials. Catalog 451, 16 pages. Gray Co., 50 Graco Square, Minneapolis 13, Minn. **IEN-0318**

PUMPS . . Model-K centrifugal pump for sand, slurries, sludges, hot solutions; design and construction points, rating tables, sump sizes. Catalog 200, 20 pages. A. R. Wilfley & Sons, Inc., Box 2330-A, Denver 1, Colo. **IEN-0319**

RELAYS . . Telephone-type units and stepping switches; coil and contact data, dimensions, mounting, contacts. Catalog 4071-F, letterhead request, 88 pages. Automatic Electric Co., 1031-35 W. Van Buren St., Chicago 7, Ill. **IEN-0320**

RELAYS . . Mercury plunger type; operating schematic and description, load ratings and dimensions on standard types, applications. Catalog 17-MP-38, 8 pages. H-B Instrument Co., 2631-35 Trenton Ave., Philadelphia 25, Pa. **IEN-0321**

RELAYS . . In midget to power types; coil and contact data, contact combinations on some 150 models, notes on construction and use, also timers. Catalog 109, 24 pages. Potter & Brumfield, 221 N. Main St., Princeton, Ind. **IEN-0322**

SAWING . . Attachment for ¼ or 5/16-in. drill to reciprocate a saw blade; construction, notes on operation without a starting hole, blade types. Folder 713, 4 pages. R. C. S. Tool Sales Corp., 23-27 N. Ottawa, Joliet, Ill. **IEN-0323**

SCAFFOLDS . . Tubular steel design; drawings and data on standard frames and other components, illustrations to show range of applications. Bulletin, "Up in the World", 8 pages. Bil-Jax, Inc., 102 Wyse Road, Archbold, Ohio **IEN-0324**

SEPARATING . . Magnetic separator for pipe-line use, stainless-steel housing; sectional drawing, description, data on 2 to 4-in. sizes. Bulletin 202, "Magnetic Pipeline Trap", 4 pages. Eriez Mfg. Co., 1303 E. 12th St., Erie, Pa. **IEN-0325**

SEPARATING . . "Super-D-Canter" horizontal centrifuge to remove solids from slurries and suspensions; operation and construction on two models. Bulletin 1254, 12 pages. Sharples Corp., 2321 Westmoreland, Philadelphia 40, Pa. **IEN-0326**

SHIPPING . . Information about Air Express in the form of answers to six questions such as destination, rates, scope. "Were Our Faces Red!", 8 pages. Railway Express Agency, Inc., 230 Park Ave., Room 536, New York 17, N. Y. **IEN-0327**

SILICONES . . Condensed data on fluids, compounds, greases, resins, varnishes based on silicone, also silicone rubber, silicon chemicals. "Reference Guide", 4 pages. Dow Corning Corp., P. O. Box 592-A, Midland, Mich. **IEN-0328**

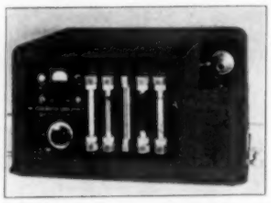
STEEL . . Stainless strip, .001 to .010 in. and to 13 in. in width; analyses, mechanical properties, forms supplied, actual and suggested uses. "Paper-Thin Stainless", 4 pages. Armco Steel Corp., 701-5 Curtis St., Middletown, Ohio **IEN-0329**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2922 if you write the maker

A NEWS ADVERTISEMENT BY FISHER SCIENTIFIC CO.

TESTING . . Induction instrument reads carbon content in ferrous metals



A weighed sample of a ferrous metal is placed in a ceramic boat and is inserted into a quartz combustion tube in this new Induction Carbon Apparatus for determination of its carbon content. The instrument connects to a source for oxygen and to a 220-volt, 60-cycle power line. It employs a silver induction coil to heat the sample to burning temperature in the atmosphere of oxygen fed into the tube. It will accommodate a full factor weight of 2.727 grams. Operation is automatic following the depressing of a start button; takes two minutes.

Heat is applied by the induction coil to attain a fusion temperature in a few seconds. Oxygen is started through its purification train to remove moisture and carbon dioxide after the sample has been preheated. The pure oxygen then passes into the combustion chamber. Resulting gases flow through a meter and remaining tubes in the train to remove sulphur dioxide and moisture. Any carbon monoxide is converted to carbon dioxide by a platinum catalyst. When combustion cycle is completed, the instrument switches to standby condition ready for the next sample. The operator can watch the fusion period through a cobalt-glass window on the combustion tube. The purification train is mounted at the front.

Designed, developed and manufactured by Fisher Scientific Co.

Complete description and prices will be sent upon receipt of your inquiry.

FISHER SCIENTIFIC CO.
711-19 Forbes St., Pittsburgh 19, Pa.

BREVITY—Identify by IEN - 2923 if you write the maker

LOCALITES
for Better Light ON the Job
Directs Light Exactly Where Needed as Easily as Pointing Your Finger

Designed Especially for Machine Tools, and Work on Assembly and Inspection Benches

MODEL 3267-H-174
Overall length 32¾". Three instantly adjustable joints. Flat oblong base for machine screw mounting.
$6.12 EACH in pkg. of 6
Single Units $7.65 ea.

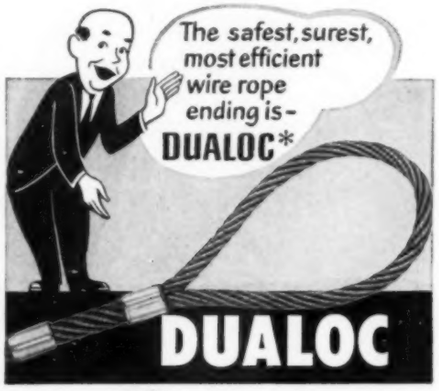
- **Rugged Construction** to stand strains and shocks
- **Instantly Adjustable** with full swivel ball and socket joints
- **Infra-red Baked Enamel Finish** — Exterior, Wrinkled Gray — Reflector Interior, high temperature White
- **Reflector** accommodates 100 watt A-21 medium screw base lamp
- **Wired Complete** with switch socket and 8 ft. oil resistant cord

WRITE FOR COMPLETE CATALOG of Localite models with various type reflectors, arms and bases for every industrial use.

THE FOSTORIA PRESSED STEEL CORPORATION
FOSTORIA, OHIO
Localites are available through selected distributors everywhere

LOCALITE fostoria for Light ON the Job
Reg. U. S. Pat. Off.

BREVITY—Identify by IEN - 2924 if you write the maker



ACCO Registered Wire Rope Slings

The Safest . . . The neat wrapping of strands around the rope, and the steel sleeve locked over the wire ends, prevents snagging. DUALOC can be grasped by bare hands. And, it is always "open" for inspection. You can see that the ending is safe to use. DUALOC *is the safest ending.*

The Surest . . . The DUALOC loop is made of wire rope that has not been unlaid and relaid. It is undisturbed, undistorted. Only the end of the rope is opened. All the strength of the wire rope is there to assure full capacity. DUALOC *is the surest ending.*

The Most Efficient . . . DUALOC is 100% efficient. The ending will outlast the wire rope. Because there is no distortion in ACCO *Registered* WIRE ROPE SLINGS, the wire rope will develop its full catalog strength. This means that frequently smaller diameter rope can be used resulting in lower original sling cost. DUALOC *is the most efficient.*

Added Values . . . Rated capacities based on 5 to 1 safety factor. Proof-tested at twice the rated capacity. Registered to assure satisfactory service. Standard unit ACCO *Registered* WIRE ROPE SLINGS, made from preformed wire rope, are stocked by leading distributors who will gladly discuss your sling problems. Custom-made slings on special order. Write today for literature.

*Trade Mark Registered

MEMBER THE NATIONAL SAFETY COUNCIL

ACCO Wilkes-Barre, Pa., Chicago, Denver, Houston, Los Angeles, New York, Philadelphia, Pittsburgh, San Francisco, Bridgeport, Conn.

AMERICAN CHAIN & CABLE
WIRE ROPE SLING DEPARTMENT
In Business for Your Safety

▼ BREVITY—Identify by IEN-2926 If you write the maker ▼

ALL PEERLESS MOTORS ARE "Peerless Registered"

MORE than 90% of all Peerless Motors are custom manufactured to meet the specific operating requirements of the equipment with which they are to be used. So we "Peerless Register" every motor before shipment. The words "Peerless Registered" are a trademark, recorded in the U.S. Patent office. Only Peerless Motors can bear this phrase, and only Peerless Motors offer you this protection. This registration record is assurance to both you and your customer that the Peerless Motor has been properly designed for your equipment so as to give best possible performance and long, satisfactory service. And the registration record makes possible the quick identification of any Peerless Motor—anywhere.

THE PEERLESS ELECTRIC CO., WARREN, OHIO

Manufacturers of Quality Motors Since 1893

Single Phase • Polyphase • Direct Current • ¼ to 15 H.P.

Peerless-Electric MOTORS·FANS·BLOWERS

▼ BREVITY—Identify by IEN-2927 If you write the maker ▼

FOR MIXING ANY FLUID you can't beat "Lightnin" Mixers"

MIXCO Engineered

VERTICAL BALL BEARING MOTORS . . . with extra heavy insulation, special ventilation. Developed specifically for continuous heavy duty mixer service.

FULLY ENCLOSED GEARS . . . run in a sealed bath of lubricant that needs changing only once a year, under ordinary conditions.

EXTRA BALL BEARINGS HERE take the load of mixing shaft off the motor bearings. This adds years of service. All bearings are prelubricated, sealed against leakage.

INSTANT ADJUSTMENT TO ANY ANGLE . . . Ball and socket clamp permits correct angle for famous Lightnin double mixing action. Quick, positive locking; no wrench required.

EASY SHAFT ADJUSTMENT . . . Thread and taper, two-piece tube and chuck cannot loosen or jam. Shafts may be interchanged.

WIDEST CHOICE OF PROPELLERS . . . Standard and special types to meet every operating condition. Easily adjustable on shaft, or removable.

LIGHTNIN PORTABLE MIXERS save time . . . money . . . manpower, on every fluid agitation job in the plant. Many Lightnins have been in service over 20 years. World's largest line of standard mixers. Electric and air motor types; direct and gear drive. Portable sizes ⅛ to 3 HP. Other Lightnin Mixers in all sizes up to 500 HP. Write today describing your needs.

GET THESE HELPFUL *LIGHTNIN* CATALOGS

- B-75 Portable Mixers
- B-78 Propeller Mixers for Closed Tanks
- B-76 Side Entering Mixers for Tanks up to 5 Million Gals.
- B-89 Turbine and Paddle Agitators, 1 to 500 HP.
- B-36 Condensed Catalog—complete line
- DH-50 Laboratory Mixers

MIXING EQUIPMENT CO., Inc.

(MIXCO) 124 Mt. Read Blvd., Rochester 11, N. Y.

In Canada: William & J. G. Greey, Ltd., Toronto 1

REPRESENTATIVES IN PRINCIPAL CITIES

▼ BREVITY—Identify by IEN-2929 If you write the maker ▼

SEALING . . Wood caps and plugs to close and protect equipment openings

Source: SPECIALTY PLUG & CAP CO.
P. O. Box 122, Lutherville, Md.

New design of internally-threaded wood caps has been added to the company's previously developed line of caps and plugs. They seal and protect plain and threaded equipment openings during manufacture, storage and shipping. The wood units were initially developed for use in the place of similar units made of other materials in short supply.

The new thread in the wood caps is the same as that on the plugs and has been developed to minimize inventory requirements for manufacturers requiring the sealing closures. Both the plugs and caps will now fit a number of parts of a given size having a variation in the number of threads per inch. Application and tightening is by hand. Soft metal threads are not damaged. Sizes and designs are available to specification.

▼ BREVITY—Identify by IEN-2930 If you write the maker ▼

PROCESSING . . Cellulose gum for thickening, stiffening, protecting

Source: TENNESSEE EASTMAN CORP.
10 E. 40th St., Room 4010, New York 16, N. Y.

Descriptive booklet available on request

New gum known as SCS, sodium cellulose sulfate, has been developed by the company for a number of processing applications. It is made by treating cellulose fibers, such as wood pulp or cotton linters, with sulphuric acid and certain other reagents. The resulting granular product is soluble in hot or cold water.

It increases viscosity rapidly when added to water. A solution distributed evenly over a smooth plate and then evaporated will leave a clear, strong, grease-proof nonburning film. Small amounts in wash water will prevent re-deposition of soil that has been removed. It will thicken paints, thicken or stiffen corn starch and other food products.

▼ BREVITY—Identify by IEN-2931 If you write the maker ▼

ISOLATING . . Vibration insulators have rating of .1 to 3 lb. per unit

Source: BARRY CORP.
700-P Pleasant St., Watertown 72, Mass.

Aluminum housing in this new Series-6465 Barrymount encloses a steel spring, a rubber air chamber and a snubber. Weight is ¼ oz. each. Height is about 1 in. under maximum rated load.

Application is primarily to protect airborne equipment against landing shocks and operating vibration. Operating temperature range is between minus 65 and plus 170 deg. F.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN-2932 If you write the maker ▼

At Last We've Found An Industrial Truck Motor That WON'T BURN OUT...EVER!

The Secret is Silicone Insulated Motors Exclusive in Automatic Electric Trucks

No Time Out of Service
No Costly Repair Jobs...Because

• Automatic has the *only* class H motor used in industrial trucks • Has up to 62% greater burn-out protection • Can even operate at 350° fahrenheit

Only cost-cutting Automatic Electric Trucks have exclusive Silicone insulated motors that won't *ever* burn out . . . saving you costly repairs and money-wasting time-out-of-service. *Not one* single armature has been lost due to insulation failure since revolutionary Silicone protection was adopted in 1946. Write for more free information today.

Trade **Automatic** Mark
109 West 87th St., Dept. C-1
Chicago 20, Illinois

Trade **Automatic** Mark ELECTRIC TRUCKS

▼ BREVITY—Identify by IEN-2933 If you write the maker ▼

TOW-LINE CONVEYOR *solves* a lot of handling problems

If you want to clear up confusion and assure an orderly flow of traffic in your plant, in your warehouse, in your order make-up, receiving or shipping departments, consider the possibilities of a MHS Tow Line Conveyor.

The sub-floor tow line conveyor gives you a completely unobstructed floor area with no overhead structures. Dollies or trucks may be engaged or disengaged at any point along its path for loading or unloading.

If it is impracticable to install the sub-floor track, you may tow trucks or dollies from an overhead MHS Monoveyor. Both the sub-floor and the overhead systems can be operated on one or more levels.

Write for a copy of Bulletin TC-1.

Mechanical Handling *Systems, Inc.* MHS

4605 NANCY AVE. • DETROIT 12, MICH.

Offices in Principal Cities

▼ BREVITY—Identify by IEN-2934 If you write the maker ▼

FORGOTTEN CONTROLLER

SINCE this simple, dependable Taylor Self-Acting Temperature Controller needs practically no maintenance, you can forget about it for months on end once it's installed. And during that time you can depend on it for processes involving no extreme load changes, and where compressed air or electricity aren't available.

For jobs like: plating and rinsing tanks, bottle and can washers, mixing and cooling kettles, hot water tanks, diesel water jackets, feed water systems, crude oil treaters, condenser cooler water in stills, oil field superheaters, wax coating machines and others.

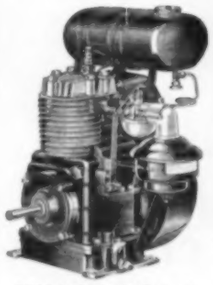
No auxiliary air supply required. Double seated valves available up to 2", single seated composition disc types up to 1". Numerous standard temperature ranges within 10°—340°F. Semi-standard temperature ranges within 165°—610°F. Choice of bulb materials and connections.

Ask your Taylor Field Engineer or write for **Catalog 36-B.** Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada.

Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.

TAYLOR INSTRUMENTS MEAN ACCURACY FIRST

▼ BREVITY—Identify by IEN-2935 If you write the maker ▼



MODEL K-12-2, 3 H. P. 4-cycle, single cylinder, air-cooled. Length 14", width 14", height 19". Wt. 43 lbs.

RELIABLE POWER FOR:
CONCRETE MIXERS
ROAD OILERS • COMPRESSORS
FLOOR SWEEPERS
GENERATORS • HOISTS
CENTRIFUGAL PUMPS
LIFT TRUCKS • PORTABLE SAWS
SNOW REMOVAL EQUIPMENT
SPRAYERS • VIBRATORS

KOHLER ENGINES

Four-Cycle Air-Cooled

Kohler Engines are engineered and built to give the economical service that has won world-wide acceptance for Kohler Electric Plants in construction and other industries. Made in several sizes, they are suited to a wide range of uses. Kohler engineers will gladly assist in working out applications for your particular requirements.

Kohler Co., Kohler, Wisconsin. Established 1873.

KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
AIR-COOLED ENGINES • PRECISION PARTS

BREVITY—Identify by IEN - 2936 If you write the maker

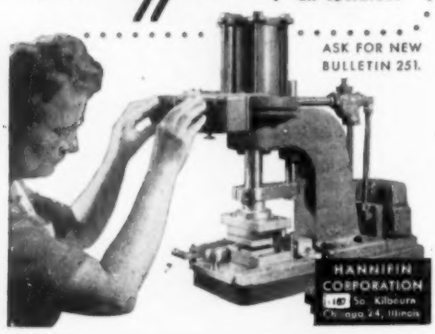
"SMALL PARTS"
Solves Production Problems

RIVETING
PRESSING
STAKING
MARKING
PUNCHING
ASSEMBLING

- Electric push button control, hand or foot operated, through Hannifin's new exclusive fast-cycling 4-way solenoid valve.
- Guided ram. Speed easily adjustable. Automatic return.
- Removable steel base plate. Facilitates changing job set-ups through use of alternate work bases.
- Extremely rigid frame. Built to big press standards for quality.
- Cylinder "TRU-BORED" and honed. Long life. Minimum maintenance.

the New HANNIFIN "Han-D-Press" air operated!

ASK FOR NEW BULLETIN 251.



HANNIFIN CORPORATION
180 So. Kilbourn
Chicago 24, Illinois

BREVITY—Identify by IEN - 2937 If you write the maker

ALL STEEL
Pallet Headquarters

POWELL makes a COMPLETE line of Standard and Job Designed Pallets

Whatever your pallet needs . . . standard, four-way lift entry, slatted or solid bottom, reversible, Nesteel stacking or special designs for special jobs . . . your Powell representative is the man for you to see.

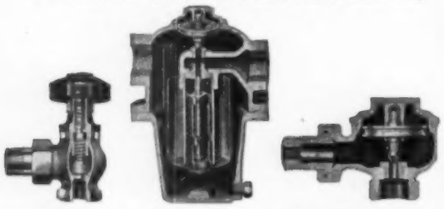
If you require a special pallet ask your Powell representative about Powell Job-Designed materials handling equipment. Here Powell "know how" goes to work for you to design and build to the exact requirements of the job at surprisingly low cost. Whatever your pallet needs . . . Powell is the name to remember.

NOTE: Because of present conditions general order steel is in short supply. If you can furnish a D. O. Government Contract number with your order faster delivery is assured.

Dept. 431

POWELL PRESSED STEEL CO. • HUBBARD, OHIO
ORIGINATORS OF COLD FORMED ALL STEEL HANDLING EQUIPMENT
In Greater Youngstown Dept. 431

BREVITY—Identify by IEN - 2938 If you write the maker



ILLINOIS
STEAM SPECIALTIES

Repair or replace worn or obsolete steam-wasting units with Illinois Specialties.

Equip your radiators with smooth-acting Illinois Supply Valves and sensitive, steam tight Illinois Thermo Traps.

Improve system operation by replacing thermostatic drip traps with Illinois Float and Thermostatic Traps wherever rapid elimination of condensate is essential.

Illinois Float and Thermostatic Traps are made in three Series to meet a wide variety of applications and for operating ranges from 50 pounds pressure to 25 inches vacuum.

Investigate! Compare! Try Illinois Traps on your worst service and be guided by results!

ILLINOIS ENGINEERING COMPANY
INCORPORATED 1900
RACINE AVENUE AT 21ST STREET • CHICAGO 8

NEW LITERATURE—Continued

"Note the special 'O' numbers"

TACHOMETERS . . "Frahm" resonant-reed units for portable or fixed mounting; operation, accuracy, illustrated models and specifications. Bulletin 31-19, 16 pages. James G. Biddle Co., 1314-18 Arch St., Philadelphia 7, Pa. **IEN-0330**

TAPES . . Adhesive tapes of paper, cloth, plastic for packaging, masking, joining, insulating, protecting, sealing; data summaries. Chart, "Permacel and Texcel", 2 pages. Industrial Tape Corp., Highway No. 1, New Brunswick, N. J. **IEN-0331**

TESTING . . Universal testing machines to 400,000 lb.; construction details, notes on screw operation, ranges, accessories. Catalog RU-4-50, 30 pages. American Machine & Metals, Inc., 552-56 12th Ave., East Moline, Ill. **IEN-0332**

TESTING . . "Speed-Sort" limit bridge instrument for production checking of electric resistors, .25 to 20,000 ohms; setup, operation. Bulletin 8-A, 4 pages. Associated Research, Inc., 3762 W. Belmont Ave., Chicago 18, Ill. **IEN-0333**

TESTING . . Series-S test chamber for product performance from minus 80 to plus 180 deg. F., 20 to 95 per cent humidity; data on eight models. Bulletin S-950, 4 pages. Bowser, Inc., 51 Industrial Blvd., Terryville, Conn. **IEN-0334**

TESTING . . Analysis equipment for metals by electrodeposition method; description of the unit and electrodes, accessories, list prices. Bulletin 130-X-50, 4 pages. Burrell Corp., 2221-25 Fifth Ave., Pittsburgh 19, Pa. **IEN-0335**

TESTING . . Equipment and reagents for conductometric determination of solids in boiler water and steam; principle, procedure, ranges available. Bulletin 2-RE-50, 4 pages. Hagan Laboratories, 51 Hagan Bldg., Pittsburgh 30, Pa. **IEN-0336**

TESTING . . Voltage-regulated power supplies for electric and electronic use; specifications on A, B and C supply. Four data sheets, "Models 315, 500-R, 510, 515", 2 pages each. Kepco Laboratories, 149-16 41st Ave., Flushing, N. Y. **IEN-0337**

TESTING . . Portable moisture meter for lumber, wood, woodwork, plaster; construction points, specifications, typical uses. Bulletin 1295, 6 pages. Weston Electrical Instrument Corp., 612-16 Frelinghuysen, Newark 5, N. J. **IEN-0338**

THERMOMETERS . . Mercury-in-glass units, straight and angle mounting; ranges, sizes, sockets. Catalog 100, 12 pages. Gotham Instrument Div., American Machine & Metals, Inc., 149 Wooster St., 4th Flr., New York 12, N. Y. **IEN-0339**

THERMOSTATS . . Type-M bimetal disc units for temperature to 600 deg. F.; section drawing accompanied by operating description, styles, ratings. Leaflet F-2000, 2 pages. Stevens Mfg. Co., 67-71 Walnut St., Mansfield, Ohio **IEN-0340**

TRANSFORMERS . . Form-W rural distribution transformer; illustrated details on design and construction points, standard and protected types. Folder TU-87, 4 pages. Wagner Electric Corp., 6488 Plymouth Ave., St. Louis 14, Mo. **IEN-0341**

TRUCK ATTACHMENTS . . Standard accessories for power lift truck including extensions, scoops, unloaders, drum carriers; picture summaries. Folder SP-6, 4 pages. Towmotor Corp., 1224-28 E. 152nd St., Cleveland 10, Ohio **IEN-0342**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

BREVITY—Identify by IEN - 2939 If you write the maker

A NEWS ADVERTISEMENT BY HONAN-CRANE CORP.

SUMP CLEANER... "One-man" mobile unit removes dirty oils, coolants

Houdaille Sump Cleaner provides quick, simple removal of dirty cutting oils or coolants containing chips, abrasives or grindings from machine tool sumps. Unit equally suitable for cleaning quenching and settling tanks or draining liquid and chemical vats. Cleaning of individual machine accomplished in 10 minutes or less.

Three-way valve permits unit to be used either for suction to remove dirty coolant from sumps, or for pressure to dispense clean coolant to sumps from storage or purification equipment. Mercoid liquid level control, actuated by float within tank, stops pump when tank is full, preventing overflow and spillage. Drain valve provides for salvaging usable oils and coolants.

Fully enclosed vacuum pump and ½ hp. repulsion induction motor operated by single manual switch. Unit equipped with 10-ft. heavy duty extension cord and plug; 10-ft., 1¼" neoprene suction hose with 30" nozzle. Large 28" diameter, roller bearing wheels and caster auxiliaries assure easy movement over any kind of flooring. Proper balance on primary axle makes dumping easy.

One man can easily operate unit after 5 minutes of instruction. Two sizes available: 80 to 125 gallon capacities.

HONAN-CRANE CORPORATION
subsidiary of HOUDAILLE-HERSHEY CORPORATION
802 Wabash Avenue, Lebanon, Indiana

BREVITY—Identify by IEN - 2940 If you write the maker

- Put HERC-ALLOY Steel Chain on the toughest job you can find. Let HERC-ALLOY service-experience records give you first hand, the undeniable answers in black and white.

Production executives and safety directors who have used HERC-ALLOY for slings or other applications agree they have yet to find an alloy steel chain superior to HERC-ALLOY.

COLUMBUS McKINNON
CHAIN CORPORATION
(Affiliated with Charles-Moore Inter Corporation)
GENERAL OFFICES AND FACTORIES: TONAWANDA, N. Y.
SALES OFFICES: NEW YORK • CHICAGO • CLEVELAND • SAN FRANCISCO
Other Factories at Angola, New York, St. Catharines, Ontario and Johannesburg, S. A.

BREVITY—Identify by IEN - 2941 If you write the maker

RUBATEX SEALS
for pre-cast concrete wall panel joints

—provide these advantages:

- RESILIENT—EVEN AT LOW TEMPERATURES
- EXCELLENT INSULATION
- ZERO MOISTURE ABSORPTION—WEATHERPROOF
- RESISTS OXIDATION

MOST of the walls of the Columbia Cellulose Co., Ltd.'s new pulp plant in British Columbia are pre-cast concrete slabs. When the slabs are assembled, strips of RUBATEX Closed-Cell Rubber are used to seal the vertical joints.

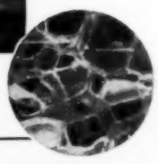
The unique closed cell structure of RUBATEX is non-porous, making an efficient insulation. Inert nitrogen retained within the cells under pressure, provides high compressive strength and resiliency. RUBATEX resists oxidation and is rot and vermin proof.

If you have a gasketing, cushioning, shock-absorbing, or vibration damping problem, try RUBATEX. For most applications, RUBATEX can be economically cut from sheet stock. RUBATEX is available in natural and synthetic stocks and in soft, medium and firm forms. RUBATEX DIVISION will gladly provide engineering advice and assistance.

For further information, write for Catalog RBS-12-49, Great American Industries, Inc., RUBATEX DIVISION, BEDFORD, VIRGINIA.

This egg dropped more than 100 feet, bounced without breaking off RUBATEX closed cellular rubber. RUBATEX absorbed and dissipated the impact shock equal to a velocity of more than sixty miles an hour without so much as cracking the egg.

Photo-micrograph shows how each cell is completely sealed by a wall of rubber. The material cannot absorb moisture. It has high insulating values, is highly resistant to oxidation and is rot and vermin proof.



RUBATEX® CLOSED CELL RUBBER

BREVITY—Identify by IEN - 2943 if you write the maker

$34.50

Makes a hundred tedious jobs fast and easy. Will sand to the bare wood or metal, featheredge, or smooth and polish to a "piano finish." Powerful direct-connect, 3450 r.p.m. 110 v., A.C. air-cooled motor. No gears, nor gear-housing to collect grit and dust. Sealed ball-bearing thruout. Cast-aluminum body and chrome plated—in hand weight only 5 lbs. Natural grip, all-position handle with sliding thumb switch and 3 wire rubber-covered cord.

Sands
Cleans
Smooths
Polishes

Three 4½" x 6½" coverings cut from standard 9" x 11" abrasion sheet.

WRITE FOR CIRCULAR

Speed Way MANUFACTURING CO.
1885 So. 52nd Avenue • Cicero 50, Illinois

BREVITY—Identify by IEN - 2944 if you write the maker

Self Lubricating

BEARINGS

NON-CRITICAL MATERIAL

The Graflube Bearing is a machineable, graphite impregnated bearing that requires no lubrication or maintenance. Field experience proves that Graflube under loads approximating those of standard design for bronze shows negligible wear after long periods of service. Graflube has been used very successfully under a wide variety of conditions. Materials used are non-critical and are carried in bulk stock. Graflube Bearings can be adapted to any size and shape—specific bearing problems are welcomed.

Write for Bulletin Giving Complete Details.

GRAFLUBE BEARING COMPANY
1416 East Burnett Street—Long Beach 6, Calif.

Distributors: General Bearing Company, Los Angeles, Calif.
W. L. Somner Company, Shreveport, La.

BREVITY—Identify by IEN - 2945 if you write the maker

Eliminates FOGGING and STEAMING of Eyeglasses and Goggles — Glass or Plastic —

K-LENS-M
Anti-Fogging
LIQUID

Easily applied, K-LENS-M Anti-Fogging Liquid forms an invisible coating that resists formation of fog or moisture on lens surfaces... brings clear vision to eyeglass wearers under severe conditions of hot steaming vapors, freezing temperatures, humid summer heat, or body perspiration . . . overcomes hazards of fogged goggles . . . increases worker efficiency and safety.

K-LENS-M Modern Liquid Lens Cleaner for Glass or Plastic

Thoroughly cleans glass or plastic eyewear — without scratching, streaking, or leaving a film. Does the job faster, at lower cost. Used in hundreds of plants. In Cabinet Bottles, Pints, and Gallons.

Remember K-LENS-M Tops Clear Vision

K-LENS-M Dispenser Cabinet With Anti-Fogging Station

COMPLETE LENS CLEANING UNIT Holds large bottle of K-LENS-M Lens Cleaner, Dispenses Tissues, one at a time; has Disposal Space for used Tissues. Attachment holds a bottle of K-LENS-M Anti-Fogging Liquid. All metal. Baked Enamel Finish. Built in Lock. Compact size for plant and office.

THE WILKINS CO.
INCORPORATED
Cortland 24, N. Y. Easy to INSTALL — USE — SERVICE

BREVITY—Identify by IEN - 2946 if you write the maker

CONTROL . . Electronic instrument controls electrically heated equipment

Source: AUTOMATIC TEMPERATURE CONTROL CO.
5202 Pulaski Ave., Philadelphia 44, Pa.

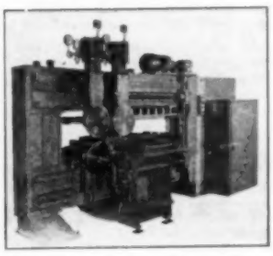
Atcotronic input controller is a new instrument to control electric input to a unit of electrically heated equipment and then to regulate alternate "on" and "off" operation to maintain the temperature within close limits. The instrument employs a Wheatstone bridge circuit consisting of the slidewire in its own assembly and the one in a pyrometer connected between it and the furnace. Any unbalance in this circuit, caused by a minute change in temperature, is amplified and employed to govern the time interval in which current will be fed to the heating elements. Power will be delivered at the maximum rate for heat absorption by the work without incurring overshooting. None is dissipated as in rheostat control.

Two types rate 10 and 30 amp. on 110-volt ac., employ a snap-acting switch and a mercury-switch relay respectively. Either can be used directly in the input circuit within its rating or to actuate a contactor for greater current demand. The housing is fitted with a door to protect the three dials at which rate of heating, control point and rate of cooling can be initially set. A pilot light signals closed circuit. Housing dimensions are about 10½ by 8½ by 12 inches. In addition to opening and closing electric heating circuits the control applies in operation of line valves, vibrator feeds.

BREVITY—Identify by IEN - 2947 if you write the maker

WELDING . . Resistance machine joins sheets in a weld free from flash

Source: SCIAKY BROS., INC.
4917 W. 67th St., Chicago 38, Ill.



Type PMM.2TL designates new resistance welding machine to produce a "mash" weld. Two sheets are overlapped to approximately 1½ times the sheet thickness and sufficient welding pressure is applied to force the plastic metal without irregularity or metal ejection from the double-thickness overlap into a single thickness only slightly greater than the body of the sheet at the weld joint. The machine illustrated joins widths of mild-steel sheet to 28 in. to form a continuous line for mill operations. It employs the company's patented three-phase circuit with a locating and clamping table to position the sheets at the proper overlap and hold them for the welding operation.

Two steel idlers roll the overlap to a required thickness immediately following the weld, which is made as soon as the operator inserts the end of the sheet to be welded to a stop position between clamping bars which close when he depresses a control button.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2948 if you write the maker

MAUREY
FHP
V-DRIVES
Your Best Buy Three Ways

FOR SERVICE...
Fast Maurey delivery keeps up with your production line—prevents delay, speeds output.

FOR SAVINGS...
You pay no more for the extra quality and service Maurey gives. You *save* on the better performance and longer service that Maurey quality assures.

FOR COMPLETENESS...
Complete stocks of MOR-GRIP V-belts meet all FHP needs. 1736 stock sizes of Hi-Q V-Pulleys for any FHP speed ratio or standard shaft. In addition, Maurey builds special V-Drives to meet special requirements.

Write for these FREE Maurey Bulletins:
Bulletin FHP 101 informs about MOR-GRIP V-BELTS
Bulletin OEM 2000 informs about Hi-Q V-PULLEYS

MAUREY MANUFACTURING CORP.
World's Largest Manufacturer of Pressed Steel and Cast Iron Single Groove V-Pulleys
2916 S. Wabash Avenue • Chicago 16, Illinois

BREVITY—Identify by IEN - 2949 if you write the maker

DON'T BE A SLAVE TO LIGHT SWITCHES

You don't have to turn the sun on and off. Why not forget about your own electric lights, too, by installing G-E Time Switches?

YOU'LL SAVE on the time and trouble of switching your lights manually.

YOU'LL CUT POWER COSTS that mount up when you leave your lights on overtime.

TIME SWITCHES

General Electric time switches are ideal for process timing, plant lighting, pump and blower control, floodlighting, and many other uses. Check these two popular models:

The T-27 Time Switch: up to 12 operations per day . . . astronomic dial available.

The T-47 Time Switch: from 5 minutes to 22 hours between ON and OFF operations.

Ask your G-E representative to show you the way to greater savings with time switches. *Apparatus Dept., General Electric Co., Schenectady 5, New York.*

GENERAL ELECTRIC

BREVITY—Identify by IEN - 2950 if you write the maker

NEW DRIVE-PIN RIVET

drive rivets with a hammer and *save time*

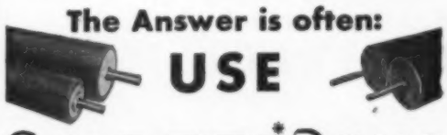
As simple as driving nails, the Cherry Rivet Company's series of DRIVE-PIN RIVETS will save you valuable time on sheet metal assembly jobs. No special methods . . . no special tools . . . these rivets are particularly well-suited to fastening light sheet to heavier sheeting or to framework where rigidity is great enough to withstand hammering. For more flexible materials, ask about Cherry Blind Rivets.

The action of driving the pin into the hollow rivet forces the head of the rivet against the top sheet. In turn, the top sheet is forced tightly against the material beneath. When the driven pin reaches the protruding sections of the rivet, these four sections expand outward and form a tight head on the blind side.

CHERRY RIVET COMPANY
A DIVISION OF TOWNSEND COMPANY
231 Winston Street, Los Angeles 13, Calif.
Address Department D-112

BREVITY—Identify by IEN - 2951 if you write the maker

The Answer is often:



USE

SHAF-TITE* ROLLS

Many Patented Constructions

Choice of

METAL, RUBBER, or WOOD ROLLS

Send For NEW ROLL CATALOG No. 48

INDUSTRIAL ROLL DIVISION

RODNEY HUNT MACHINE CO.

873 Main Street — RODNEY HUNT — Orange, Mass., U. S. A.

*Reg. U. S. Pat. Off.

BREVITY—Identify by IEN - 2952 if you write the maker

• Save time, cut costs on underground pipe installations. With a GREENLEE Pusher *one man* pushes pipe through the ground *easily, quickly*...under streets, railways, floors, walks, lawns. Cuts job time to a fraction . . . eliminates extensive trenching and tedious backfilling, tamping, re-paving. Often pays for itself on first few jobs.

GREENLEE

WRITE GREENLEE TOOL CO., 1863 HERBERT AVENUE ROCKFORD, ILLINOIS, for illustrated literature and complete facts on this timesaving GREENLEE tool that cuts job time and costs.

BREVITY—Identify by IEN - 2953 if you write the maker

TO: Purchasing Dept.
FROM: Production Dept.

Bill,
When you place orders with toolmakers, please insist on V-R Carbides.
Performance counts and V-R has it.
Fred

CERTIFIED CARBIDES • TANTONG CASE ILLINOIS
Over 24 Years
V-R
WAUKEGAN, ILLINOIS U.S.A.
VASCOLOY-RAMET CORPORATION

VASCOLOY-RAMET CORPORATION
WAUKEGAN, ILLINOIS

BREVITY—Identify by IEN - 2954 if you write the maker

Air Operated
ROTARY WORK FEEDER

Deftly holds and delivers small parts to drill, tap, swage, stake, etc. Stations accurate to .002". Guaranteed against over-travel or "skipping." Indexes as slow or fast as you like, up to 10,000 per hour. Compact and sturdy, easy to tool and hook up.

Standard dial plate 10"; available in 12". For a new job, simply tool up a new dial. Readily combines with "MEADMATIC" Timer, Air Hammer, Air Press, Drill Presses, etc. — to make almost completely automatic machine—operator merely loads.

Write for full details.

MEAD
SPECIALTIES COMPANY
4114 N. KNOX AVE., Dept. EA-31, CHICAGO 41, ILL.

NEW LITERATURE—Concluded

"Send us your own new literature for review"

TRUCKS . . Type-FT fork lift truck, 3,000 and 4,000 lb.; detail specifications, construction highlights, controls, dimensions, attachments. Bulletin 1324, 8 pages. Baker-Raulang Co., 1248-52 W. 80th St., Cleveland 2, Ohio **IEN-0343**

TUBES . . In shaped and fabricated form; illustrated facilities and examples for bending, swaging, upsetting, flame-spinning, welding. "Tube Fabrication", 4 pages. A. B. Murray Co., P. O. Box 476-A, Elizabeth, N. J. **IEN-0344**

TUBES . . Stainless-steel tube, .050 to .625 in. od.; notes on its properties and applications in chemical process and petroleum-industry service. Folder, 4 pages. Tube Methods, Inc., 51 Industrial Ave., Bridgeport, Pa. **IEN-0345**

VALVES . . Water-pressure reducing valve, 2½ to 24 in.; sectional view and an outline of construction features, operation. Bulletin W-3, 6 pages. Golden-Anderson Valve Specialty Co., 2079 Keenan Bldg., Pittsburgh 22, Pa. **IEN-0346**

VALVES . . Pneumatic operating valves for hand or foot actuation, ¼ and ⅜ in.; sectional drawings and dimensions, list prices. Bulletin 303, 4 pages. Ross Operating Valve Co., 118-22 E. Golden Gate Ave., Detroit 3, Mich. **IEN-0347**

VALVES . . Stainless-steel units in gate and globe designs; sizes and list prices on these and stainless pipe fittings, pumps, gages, strainers. Bulletin 160, 8 pages. Schnitzer Alloy Products Co., 323-27 Pine St., Elizabeth 1, N. J. **IEN-0348**

VALVES . . Angle, check, gate, globe types in brass and iron-body construction; cut-away views, specifications, list prices, accessories. Catalog 50-V, 112 pages. Stockham Valves & Fittings, Box 2592-A, Birmingham 2, Ala. **IEN-0349**

VALVES . . For medical gas cylinders; captioned assembly drawing and description, sectional views and ratings on a line of units. Bulletin 5012, 8 pages. S. S. White Dental Mfg. Co., 10 E. 40th St., 23rd Floor, New York 16, N. Y. **IEN-0350**

VENTILATING . . Blowers, fans, unit heaters; condensed information on capacities, dimensions, electrical and power ratings. Bulletin S-311, 8 pages. Ilg Electric Ventilating Co., 2848-52 N. Crawford Ave., Chicago 41, Ill. **IEN-0351**

VIBRATING . . Motor-driven shaker to unload hopper-bottom cars containing granular material; illustrated construction points. Bulletin 07-B-7221A, 6 pages. Allis-Chalmers Mfg. Co., 909 S. 70th St., Milwaukee 14, Wis. **IEN-0352**

WASHROOMS . . Metal toilet compartments in floor and ceiling-hung models, dressing stalls; specifications, detail drawings. "Metal Toilet Compartments", 8 pages. Flat Metal Mfg. Co., 21-35 Borden, Long Island City 1, N. Y. **IEN-0353**

WATER TREATING . . Ion-exchange equipment to demineralize water; description, specifications and performance on six models. File folder, "Demineralizers", 8 sheets. Penfield Mfg. Co., 17-21 High School Ave., Meriden, Conn. **IEN-0354**

WELDING . . Arc machines for ac. service in inert-gas welding; operating sequence, specifications on three models from 200 to 500 amp. Bulletin W-81-1, 4 pages. Harnischfeger Corp., 4402 W. National Ave., Milwaukee 14, Wis. **IEN-0355**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2955 if you write the maker

A NEWS ADVERTISEMENT BY LABELON TAPE CO., INC.

NEW LABELING TAPE . . Write on it won't smudge . . stays clean, resists oil, acids . . pressure sensitive

Every industry will find Labelon Tape a time and money saver. Sticks firmly, without moistening, to any smooth, clean surface, yet can be instantly removed . . . won't curl or discolor with age or variations in temperature or humidity.

Write on it with pencil, stylus or typewriter. Message won't smudge or smear—resists dirt, acid, water, oil and heat up to 150° F. That's because Labelon is the only labeling tape with a special writing surface sandwiched between two layers of acetate. Available in different widths and colors, with or without self dispenser.

Labelon Tape is perfect for labeling stock room bins, shelves, and hard-to-mark parts; for tool tagging and special equipment identification; for marking service department repairs; for indicating rejected parts; for labeling laboratory equipment, supplies, experiments; for panelboard or electrical wiring; for identifying files, storage boxes and general office equipment.

Samples and Catalog on request.

LABELON TAPE CO., Inc., Dept. IEN
100 Anderson Ave., Rochester 7, N. Y.

BREVITY—Identify by IEN - 2956 if you write the maker

REALOCK

IS TAMPER-PROOF

Realock Fence gives your plant property tamper-proof protection against trespassing, arson, theft and other costly hazards. That's because essential fittings are designed to permit the removal of bolts from the inside only.

Stoutly constructed of steel wire, heavily galvanized, Realock Fence is weather-resistant, extra durable and practically maintenance free. The Wickwire Division will not furnish integral arms as shown, but will substitute a malleable base with pressed steel arms. For complete details refer to Sweet's Catalog. For free estimate consult your classified telephone directory — or write direct.

REALOCK FENCE CF&I

WICKWIRE SPENCER STEEL DIVISION 361 Delaware Ave., Buffalo 2, N.Y.
THE COLORADO FUEL & IRON CORP. Continental Oil Bldg., Denver 2, Col.
THE CALIFORNIA WIRE CLOTH CORP. 1000 - 19th Avenue, Oakland 6, California
BRANCHES & DISTRIBUTORS IN KEY CITIES EVERYWHERE

BREVITY—Identify by IEN - 2957 if you write the maker

for the one man in your organization to whom FITTINGS are IMPORTANT we developed
"ERMETO"

Now you can make tube and pipe connections at 1000 psi and above with NO FLARING, NO THREADING, NO WELDING, NO SOLDERING! The patented design of Weatherhead ERMETO Fittings permits installation with no tools but a wrench. Easy to take apart and re-tighten with a pressure tight joint. *Maintenance time saved is production time earned!*

Sleeve is heart of Ermeto fitting. Sleeve and nut slip onto tube; end of tube inserts into body of fitting.

Tighten nut; pilot of sleeve contracts engaging outer surface of tube.

Fully tightened. Tube end butts tight against body shoulder. Nut presses sleeve bevel causing entire sleeve to clamp tube. Forces acting on sleeve cause it to bow, give it a spring action which holds tension between body and nut—prevents loosening.

You can forget psi when you specify ERMETO Designed for high-pressure use, ERMETO fittings have so simplified and cut costs that it pays to standardize on ERMETO FOR ALL JOINTS. The advantages in simplified inventories are obvious. ERMETO meets J. I. C. requirements. Made in sizes ⅛" to 2" O. D. in steel, stainless steel and brass.

WRITE FOR DETAILS — get catalog No. E-1457. Address—The Weatherhead Company, Dept. F-1, 300 E. 131st Street, Cleveland 8, O.

FIRST IN HYDRAULIC CONNECTIONS
The Mark of Quality
WEATHERHEAD
Plants at Cleveland, Ohio; Angola and Columbia City, Indiana; and St. Thomas, Ontario

BREVITY—Identify by IEN - 2959 if you write the maker

Answers your need for small, low cost

Air Compressors

If your product calls for a "small packaged" air compressor or vacuum pump, Brown Air Compressor is your answer. Only 9½ inches high, it delivers 2 cu. ft. per minute at 30 to 40 lbs. pressure. Advanced type diaphragms instead of oily pistons assure absolutely clean, oil-free air. Requires no lubrication. Operates in any position. Factory-sealed ball bearings. Write for full data.

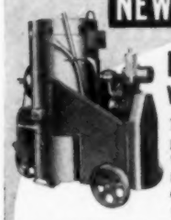
Also Twin Model with double capacity.

W. R. BROWN CORPORATION
5730 ARMITAGE AVE., CHICAGO 39, ILL.

AIR VISES • AIR REGULATORS • AIR FILTERS • PAINT SPRAYERS

BREVITY—Identify by IEN - 2960 if you write the maker

OPERATES INDEPENDENTLY
of power source
NEW Gasoline Engine Powered



HOFFCO-VAC #50
Vacuum Cleaning Portable

Now—for the first time—a heavy-duty portable that can be operated anywhere. Use it for fast, efficient cleaning where wiring expense would be excessive—in outdoor areas—in widely scattered plant locations—and anywhere else that ordinary cleaners could not be used.

This 5 H.P. model provides 2-sweeper operating capacity and all other outstanding features of the electric motor driven Hoffco-Vac #50. Only exception is that power unit is a 4-cycle, single cylinder heavy-duty air-cooled engine rated at 6.8 H.P. (5.4 continuous). Flame-arresting type muffler.

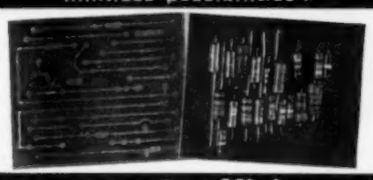
7½ CUBIC FT. DUST STORAGE CAPACITY BUILT FOR HEAVY DUTY SERVICE

WRITE FOR BULLETINS A-794 & 803

AIR APPLIANCE DIVISION
U.S. HOFFMAN MACHINERY CORPORATION
103 Fourth Ave., New York 3, N. Y.
Canadian Plant: Canadian Hoffman, Newmarket, Ont.

BREVITY—Identify by IEN - 2961 if you write the maker

PRINTED CIRCUITS
limitless possibilities!



economy! efficiency!

Emeloid "AUTOMATIC CIRCUIT FABRICATION" is the reproduction of an electrical circuit on an insulating surface of either thermosetting or thermoplastic material. This reproduced circuit is made of a conductive material such as copper so that it replaces conventional wiring.

It may also be used as commutator rings, switching mechanisms, etc. Some advantages of Emeloid's process compared to conventional wiring are as follows:

1. FREEDOM FROM WIRING ERRORS
2. CIRCUIT CHANGES EASILY MADE
3. REDUCTION IN COST
4. MORE PRODUCTION PER UNIT TIME
5. UNIFORM GEOMETRIC POSITIONING
6. INDEPENDENCE FROM LABOR SKILLS
7. ELIMINATION OF ENGRAVING OR STAMPING
8. MINIATURIZATION

INQUIRE DEPT. P. C. No. 1

The EMELOID CO. PLASTICS PRODUCTS
HILLSIDE, N. J.

BREVITY—Identify by IEN - 2962 if you write the maker

TESTING . . Oscilloscope for laboratory and inspection uses

Source: RADIO CORPORATION OF AMERICA
413-17 S. 5th St., Harrison, N. J.

Type WO-56A is a new 7-in. oscilloscope featuring three push-pull stages of direct-coupled amplification, wide frequency response, high deflection sensitivity and excellent square wave response for accurate wave-form reproduction. The instrument is portable, weighs 31 pounds. The sweep oscillator provides sawtooth output that is linear over the oscillator range of 3 to 30,000 cycles.

The oscillator is Potter-type vacuum-tube design. It operates with a horizontal amplifier having a frequency response essentially flat from dc. to 500 kc. The push-pull design of the vertical and horizontal amplifiers provides a sharp trace over the useful area of the screen.

BREVITY—Identify by IEN - 2963 if you write the maker

PIPE . . Made of stainless steel also tubes, sizes ⅜ to 4½ inch

Source: CARPENTER STEEL CO.
131-35 Springfield Road, Union, N. J.

Weld bead is removed

Alloys B and C designate new lines of pipe and tube made of Hastelloy-analysis strip stock for corrosive services. The pipe is available in ⅝ to 4-in. sizes. The tubing is made in diameters between ⅝ and 4½ inches. Both can be fabricated in standard equipment.

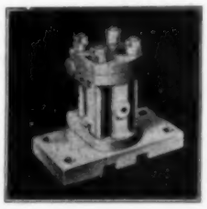
Alloy B is suited particularly for resistance to hydrochloric acid in all concentrations at temperature to 212 deg. F. It is suited also for use with sulphuric at temperatures above 175 deg. F. It is not recommended for oxidizing atmospheres.

Alloy C will withstand strong oxidizing conditions such as those encountered with nitric acid, free chlorine, aqueous solutions of chlorine and acid solutions of ferric and cupric salts. It also resists attact by phosphoric acid, acetic, formic, and sulphuric acids. It is recommended for use with hydrochloric acid to 120 deg. F.

BREVITY—Identify by IEN - 2964 if you write the maker

VIBRATING . . Pneumatic unit promotes flow in bins, hoppers, chutes

Source: CANNON VIBRATOR CO.
1106-10 Power Ave., Cleveland 14, Ohio



Quiet Type Style-EM designates a new vibrator in which the piston operates without impact at either end of its travel. The action minimizes noise, prevents breakage of bolts and end plates. Sizes in the line range from 1⅝ to 4 in. in piston diameter.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 2965 if you write the maker

You'll see this label

on the finest

air cylinders

For 50 years the Hanna name plate has been a familiar trademark-of-quality throughout industry. Men who demand the best in cylinder performance, reliability and long life have specified Hanna Air and Hydraulic Cylinders for 1001 uses—in the products they build for sale... to save manual labor and increase production in their own plants . . . wherever push, pull, lift, press, clamp or control is needed. Among the multiple applications where Hanna Air Cylinders can be used to great advantage there are probably some or several that may solve YOUR PROBLEMS. Check them over.

Hanna Air Cylinder Catalog No. 236 gives complete details—Write for it.

Hanna Engineering Works
HYDRAULIC AND PNEUMATIC EQUIPMENT · CYLINDERS · VALVES · RIVETERS
1765 Elston Avenue, Chicago 22, Illinois

BREVITY—Identify by IEN - 2966 if you write the maker

SHOOT THE WORKS

. . . with hurricane blasts of air from a CLEMENTS-CADILLAC cleaning tool. Oust hazardous Dust, Dirt, and Grit this fast, easy way. It's a sure bet you'll reduce breakdowns and have better running, longer lasting machinery.

SAVE TIME • MONEY
PREVENT DAMAGE TO MACHINERY WITH THE . . .

Made in 5 models with attachments for every cleaning job.

PORTABLE COMBINATION BLOWER-SUCTION CLEANER

CLEMENTS CADILLAC

CLEMENTS MFG. CO.
6620 S. NARRAGANSETT AVE. CHICAGO 38, ILL.

ASK YOUR MILL SUPPLY DEALER OR WRITE US FOR DATA

BREVITY—Identify by IEN - 2967 if you write the maker

Increase Arc-Time...Welding Output 50%
with Worthington-Ransome Turning Rolls

Eliminate waste waiting time—turn cylindrical pieces automatically . . . continuously . . . at any desired speed.

And get better welds . . . because all welding is done in *downhand* position with heavier electrodes.

Capacities 3 to 150 tons.

Important Features

- **Anti-friction bearings.**
- **Steplessly-adjustable variable speed drive.**
- **Faster load handling—due to drive being lower than rollers.**
- **Easy maintenance—complete drive quickly removable.**

Write for Bulletin 228, Worthington Pump & Machinery Corporation, Welding and Assembly Positioning Equipment Division, Dunellen, N. J.

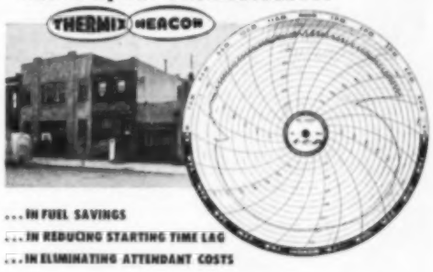
WORTHINGTON

WORTHINGTON-RANSOME TURNING ROLLS

BREVITY—Identify by IEN - 2968 if you write the maker

Small HEACON DAMPER Applications that Pay for Themselves...

THERMIX HEACON



. . . IN FUEL SAVINGS
. . . IN REDUCING STARTING TIME LAG
. . . IN ELIMINATING ATTENDANT COSTS

A 200 H. P. Keeler Boiler supplies power for this modern laundry. A Heacon Type L H Damper, located in the duct connecting the outlet of the boiler to a P-D Fan Stack, was installed to maintain pressure during banking periods.

Prior to installation, the boiler was banked at 5:30 P.M., fired to 125 psig at 1:00 A.M. and at 6:30 A.M. available pressure for starting would average 30 psig. Since installation of the Heacon Damper, the oil burners are shut down at 4:45 P.M. and the damper closed. At 6 A.M. when the stop valve is opened, the boiler pressure is 109 psig. This sequence is illustrated by the pressure chart. Approximately 300 gals. of oil are said to be saved each week. In addition, the cost of a watchman to fire the boiler at 1:00 A.M. is saved and an automatic fire alarm system has reduced insurance rates.

Your critical damper problems, large or small, can be solved by Heacon Dampers, at a cost that will pay for itself in six months. Our engineers will be glad to show you how.

THE THERMIX CORPORATION
GREENWICH CONN.
Canadian Affiliates: T. C. CHOWN, LTD.
1440 St. Catherine St. W., Montreal 25, Que. • 50 Abell St., Toronto 3, Ont., Can.

BREVITY—Identify by IEN - 2969 if you write the maker

designed for your product...

METAL **WASHERS STAMPINGS**

Exactly to your specifications.

Quick delivery, any quantity, large or small. Precision forming, of quality materials insured by Quadriga's more than half a century of experience and facilities.

Quadriga

Send B/P, Samples or Specifications for prompt estimate.

WASHERS: Special Flat, Tension and Spring, Formed and Drawn, Cupped and Finishing—any washer material. Also wire terminals.

STAMPINGS: Any design. Press capacity to 120 tons, depth of draw to 4". We build the dies and operate them to fast production in all metals.

Ask for complete illustrated catalog.

THE QUADRIGA MANUFACTURING CO.
215A WEST GRAND AVE. CHICAGO 10, ILL.

BREVITY—Identify by IEN - 2970 if you write the maker

B.F. Goodrich

These tires are "specialists" . . . each tire for a specific job and *only* a specialist can choose the right one!

YOU can save up to half of your industrial tire and wheel costs by fitting the right tire to the job. There are hundreds of combinations of size, type, treads and compounds. Only *one* will do a given job best. It takes a trained man to know which tire will operate most efficiently on your job.

Let TW ANALYSIS lengthen tire life

Your local B. F. Goodrich man is a tire specialist. He's been given training so that he can analyze your operation . . . study loads, hauls, equipment, floors and hauling surfaces and then make specific tire and wheel recommendations to you. He'll also give you suggestions on tire care and maintenance. In many cases, costs have been reduced as much as 50%. The B. F. Goodrich recommendations are impartial because BFG has the only *complete* line of industrial tires: 14 types of tires, 7 different tread compounds and a complete line of sizes . . . *actually hundreds of different tires.*

A similar program is available for manufacturers of industrial hauling equipment.

For full details of the TW Analysis plan, mail the coupon below. There's no obligation whatsoever.

The B. F. Goodrich Co.
Department TW-92
Akron, Ohio

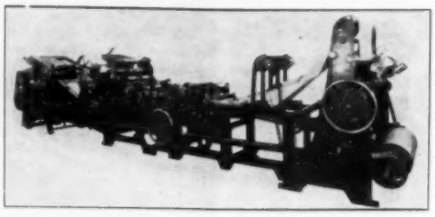
Please give me additional information on your new Tire and Wheel Analysis plan.

Name_____
Title_____
Company_____
City_____ State_____

BREVITY—Identify by IEN - 2972 if you write the maker

PACKAGING . . Bag making machine for five pound to sixth-barrel sizes

Source: POTDEVIN MACHINE CO.
1285 38th St., Brooklyn 18, N. Y.



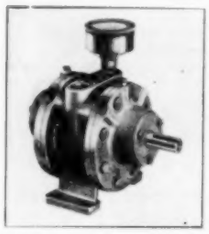
Model 4S designates new machine mounting a three-station drum, an adjustable former for width variation, a paper-roll lifting device at the feed end, a rotary cut-off and a paper-speed thumb-notching mechanism. A trade-mark imprinting unit and a two-hole punch and scorer for string-handled bags can be added as an attachment. An aniline press can be connected to make multi-colored printed bags in one operation. Register of pre-printed paper with the cut-off is assured by the machine's compensator and electric-eye equipment.

The machine can be set up to make bags from 7½ to 17 in. in width with bottom width at 2⅝ to 6 inches. Tube length ranges from about 10⅝ to 28½ inches. Duplex bags can be made on this machine by adding a liner attachment.

BREVITY—Identify by IEN - 2973 if you write the maker

MOTOR . . Rotary pneumatic design, ratings to 4 hp., pressure to 80 lb.

Source: GAST MFG. CORP.
119 Hinckley St., Benton Harbor 2, Mich.



No. 8 is a new design in the company's line of vane-type rotary pneumatic motors for application where there is an explosion hazard and for smooth drive over a range of speeds down to near zero. The motor can be stalled by overload without danger of overheating. Speed is controlled by regulating the air inlet valve.

Rating is ½ hp. at 500 rpm., 3 hp. at 1,500 rpm. in a reversing design. Rating is to 4 hp. for non-reversing assembly. Operation is on air pressure from 30 to 80 lb. with consumption at 20 to 100 cfm. depending on speed and load. Overall dimensions are about 8⅛ by 5¼ by 6½ inches.

The rotor is mounted on a shaft riding in ball bearings in the housing. Seals are employed on the shaft in preference to packings. The sliding valves are arranged radially in the rotor. They move outward by centrifugal action, take up wear without need for attention. Oil reservoirs supply the bearings. A filter mounts on the exhaust connection.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
Products are listed by name and function in the index, page 110

BREVITY—Identify by IEN - 2974 if you write the maker

PALMGREN ANGLE VISES

HEAVY-DUTY Model

For Quick — Accurate Set-ups

PALMGREN Heavy Duty Angle Vises are built sturdy and rugged for tough, heavy jobs. They are accurately graduated in degrees, can be quickly adjusted to any angle, stay locked under severe service and save valuable hours otherwise wasted in tedious make-ready, wedging or making temporary jigs and fixtures.

Jaws are hardened and ground. Special outstanding features are the size and opening of jaws—4" Jaws open full 4"; the 6" Jaws open full 6" etc., with corresponding depth of Jaws. Vise can be used as ordinary vise when lowered to horizontal position. Swivel bases furnished if desired. Sizes 4", 6" and 8" Jaws and openings. Prompt deliveries.

ORDER TODAY Be Sure of IMMEDIATE DELIVERIES

Write for bulletin on complete line of PALMGREN Vises
CHICAGO TOOL & ENGINEERING CO.
Mfrs. of PALMGREN PRODUCTS for over 25 years
8406 SOUTH CHICAGO AVENUE • • • CHICAGO

PRECISION WORK AT ANY ANGLE

BREVITY—Identify by IEN - 2975 if you write the maker

10 TIMES HIGHER ABRASION RESISTANCE... standard abrasive wheel test

4 TIMES HIGHER SNAG RESISTANCE... standard needle test

MUCH HIGHER CHEMICAL RESISTANCE... standard strip immersion tests . . . than natural rubber or standard synthetics

SURETY SURESEAL Synthetic Rubber Gloves

ADD UP TO SAFER HANDS, LONGER WEAR, LOWER HAND PROTECTION COSTS.

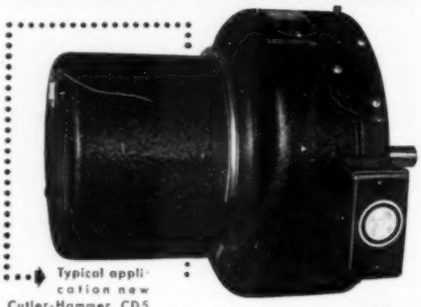
At The Greater New York Safety Show Booth 60

THE SURETY RUBBER CO. CARROLLTON, OHIO

Ask for Surety's unique Glove Selector, the quick guide to the right glove material for your operations. Dept. I.

BREVITY—Identify by IEN - 2976 if you write the maker

New Better Line of C-H DISC BRAKES



Typical application new Cutler-Hammer CD5 Disc Brake on Fairbanks, Morse & Co. axial air-gap motor.

For easy unit mounting on NEMA type C motor flanges, easy handling, installation, accessibility even in "tight corners"

Now, makers and users of motors have available a line of disc brakes that mount without modification on NEMA Standard Type C Motor Flanges. From 1½ to 75 lbs. ft. brake torque, for a.c. or d.c. service. Now, brakes can be mounted on a vertical shaft without modification.

CD4 size Disc Brake 3½ inches long, 1½ to 3 lb. ft. brake torque.

These new Cutler-Hammer brakes are smaller, lighter, easier to handle, provide utmost compactness, easy mounting and accessibility, operating perfection and dependability.

CD5 size Disc Brake 6⅞ inches long, 10 to 35 lb. ft. brake torque.

Mounting plate that supports brake mechanism has standard mounting holes for NEMA type C motor flanges, also hole for leads from brake coil through motor to terminal box. Conduit openings are also provided. Wrap-around cover lifts off laterally, needs no brake end clearance. A simple fastener holds cover in place.

CD4 size has simple direct acting magnet member. Larger sizes are solenoid operated, with limited stroke for sure closing and no coil burn-out. Use of *single* disc provides snappy action, no drag and less wear. Brake lining is a solid disc with no rivets. CD4 never needs adjustment once it leaves the factory. Infrequently needed adjustment on larger sizes easily discovered, easily made. Manual release is optional on CD4, is standard with automatic reset on larger sizes and incorporates a lining wear indicator. Smooth, gray, steel cover harmonizes pleasingly with motor finish. CUTLER-HAMMER, Inc., 1378 St. Paul Ave., Milwaukee 1, Wisconsin. *Associate:* Canadian Cutler-Hammer, Ltd., Toronto, Ont.

CD8 size Disc Brake 7¹¹⁄₁₆ inches long, 50 to 75 lb. ft. brake torque.

CUTLER-HAMMER MOTOR CONTROL C-H

BREVITY—Identify by IEN - 2978 If you write the maker

FOR THESE *Extras*

LONGER SERVICE

LESS MAINTENANCE

HIGHER PERFORMANCE

use STAINLESS STEEL

FLOATS

YOU can solve virtually all your float problems by standardizing on Stainless Steel Floats from Chicago Float Works. You get longer service and less maintenance because Stainless Steel Floats resist corrosion and withstand high temperatures and pressures. Extreme strength insures them against collapsing and they always respond perfectly to level fluctuations because of permanently high buoyancy. Install our high quality Stainless Steel Floats and be sure of long, dependable operation!

WRITE FOR FREE CATALOG

This illustrated catalog gives complete details on sizes, shapes, spud connections, and engineering data on Chicago's complete line of standard or special floats.

CHICAGO FLOAT WORKS, INC.
2326 S. Western Ave., Chicago 8, Illinois

BREVITY—Identify by IEN - 2979 If you write the maker

IT'S ALWAYS RIGHT
and right on schedule

...with wiring materials via Graybar

You're sure every item on your wiring materials and supply order will be right for the job—and if you schedule ahead with Graybar, you'll stand the best possible chance of having everything arrive on the job site when it's needed. You know all the items will fit together properly. Because you can depend upon Graybar delivery commitments, there'll be no waiting for conduit to come from one supplier . . . boxes and fittings from another . . . wire from a third. And your order gets an important "plus" of personal interest, for Graybar is wholly owned by its operating and retired personnel. From the man who takes your order to the one who packs it, we're anxious to serve you well.

EXPERT HELP WHEN YOU NEED IT

For help in planning complicated systems or solving difficult wiring problems, a Graybar Inside Construction Specialist is available. His recommendations, supplementing the knowledge of your local Graybar Representative about materials and delivery, will help keep your projects moving "right on schedule".

A single source for all your needs

Graybar distributes products made by more than 200 leading manufacturers—a total of over 100,000 carefully selected materials, supplies, equipment and tools for wiring, lighting, communication, power, and other electrical needs.

For any job—large or small, indoors or out—a single order to Graybar can cover all your requirements.

Order ahead for on-schedule deliveries

As you know, reconversion of essential industry is producing shortages of various types of electrical equipment. To make sure your jobs proceed as planned, place your orders as far ahead as possible—and always order from Graybar. For materials in short supply, Graybar will establish firm shipping dates to help you or your contractor work out and *stick* to practical timetables. 124-123

You get the best of everything electrical Via Graybar

IN OVER 100 PRINCIPAL CITIES

BREVITY—Identify by IEN - 2981 If you write the maker

ELEVATOR . . Hydraulic ramp levels platform with a truck floor

Source: ROWE METHODS INC.
1741-45 E. 25th St., Cleveland 14, Ohio

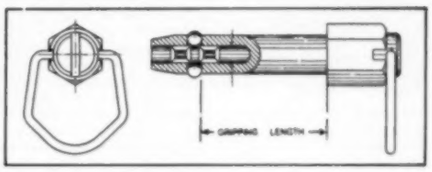
Improved design of the Adjust-A-Dock, previously described IEN-256-50, now includes a pair of ½ by 14-in. hinged plates, in place of the ¼ by 10-in. plates previously employed, to bridge at both ends of the elevator assembly. The unit also employs actuators in both of its layover arms which are made of cast steel and are rounded to minimize tire wear. The hydraulic cylinder has a chromium-plated plunger to prevent corroding and a deep brass marine-type gland with chevron packing for friction-free operation. The oil supplied for the hydraulic power transmission is not affected by changes in temperature as low as minus 60 deg. F.

The assembly is standard at 6 ft. in width and between 5 and 10 ft. in length. Load capacity is maximum at 20,000 pounds. Pressing and holding one of two pushbuttons applies hydraulic pressure to the power cylinders and hinges the dock upward for maximum movement of about 21 in. at the outer edge. Release of the pushbutton stops the pump motor. At this point a check closes and oil is trapped to hold the ramp in set position. Pressing and holding the second pushbutton actuates the solenoid valve and flow-regulating valve in a return line to the reservoir so the ramp can move down.

BREVITY—Identify by IEN - 2982 If you write the maker

FASTENING . . Ball lock pin for pivot connections, quickly removable

Source: AVIATION DEVELOPMENTS INC.
2938-42 N. Hollywood Way, Burbank, Calif.



New design of the company's Pip quick-release pin employs steel only in place of a previous die-cast cap that was subject to breakage if the user struck it with a hammer. The new pin retains the original ball-locking action in which a central plunger holds two balls in outward locking position or can be operated axially, against spring action in the head, to permit the balls to retrack so the pins can be withdrawn from a hole. The design eliminates need for a threaded fastening or a counter pin on the nose end in applications such as pivots, shackles, links in which the pin serves in shear primarily.

Size range is ¼ to 1 in. shank diameter. The smallest unit has a grip length ranging from .3 to 2.1 in. in ten steps. The largest ranges from 2 to 4 in. in 11 steps. Ultimate strength in single shear is 3,930 lb. for the smallest unit, about 66,000 lb. for the largest. Turning the ring at the head end locks the unit in place against accidental release.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2983 If you write the maker

Convince Yourself WITH THIS TEST!

See How VOLAX Removes Printing Ink COMPLETELY without Irritating Skin!

1. Ask a pressman to dip his hands in printing ink—*it's stubborn . . . hard to remove.*

2. Have him use VOLAX Hand Cleaner—ink's off in a jiffy—*and safely too!*

Your DOLGE Service Man will be glad to demonstrate

VOLAX is designed for heavy-duty skin cleansing. It contains mild soaps, water softener and friable volcanic ash . . . removes ground-in printer's ink with a gentle, non-irritating action. VOLAX is the *specific* cleaner for tough, ground-in dirt and ink discoloration.

VOLAX

dependable

DOLGE

WESTPORT, CONNECTICUT

BREVITY—Identify by IEN - 2984 If you write the maker

H & K PERFORATED MATERIALS
offer you . . .

AVAILABILITY
H & K is prepared to perforate metal, plastic, fabrikoids, masonite, plywood and many other materials available in sheet, plate or coil form—in thicknesses from tissue thin to 1" steel.

PATTERNS
A wide selection of patterns are available in standard round, square, slot, oblong, triangular holes and also special holes such as indented, lipped, burred, tapered, stabbed, etc.

ACCURACY
Hole sizes can be held to a tolerance of ± .0005" when required. Holes are accurate and uniform in size, shape and spacing.

OPEN AREA
Various spacings and arrangements of our perforations provide wide range from which to select a required percentage of open area.

SURFACE
Smooth and easy to clean.

Send us your specifications for recommendations without obligation.

If you do not have H & K Catalog #62 —write for it!

The Harrington & King PERFORATING Co.
5657 Fillmore Street, Chicago 44, Illinois
114 Liberty Street, New York 6, N. Y.

BREVITY—Identify by IEN - 2985 If you write the maker

Clancy steel clamps won't rust on . . . are easy to remove.

Merely loosen nut and bolt and remove.

Replace and tighten. Perfect circle assures uniform fit.

CLANCY
SURE-GRIP HOSE CLAMPS
Can be Reused

. . . can be removed and replaced time after time without injury to the hose, clamp, nut or bolt.

Clancy Sure-Grip Clamps keep their shape, hold any pressure the hose will stand. All parts separately galvanized — no rough edges, won't rust or stretch. For air, gas, water or steam. Every size to fit any hose — foreign or domestic. Write for prices.

J. R. CLANCY INC.
1008 W. Belden Ave.
SYRACUSE 4, N. Y.

BREVITY—Identify by IEN - 2986 If you write the maker

ACCO SLING CHAIN *Adjuster*

FOR UNBALANCED LOADS

Pat. No. 2,436,247

FORMED POCKETS PREVENT SLIPPAGE

a New Idea!

Now any load can be lifted the easiest way it can be picked up. And perfect balance is maintained every time.

Sling hooks are attached to load, saddle moved to correct position along chain's links which fit in pockets of the ACCO SLING CHAIN ADJUSTER. Then load is ready for lifting. Twisting or spiking of chain is unnecessary. Made for ½", ⅜", ⅝" and ¾" chain.

Adds greater safety on level lifts — Prevents slippage on angle lifts — Provides control of unbalanced lifts

SEE your AMERICAN CHAIN distributor or write us for full information

ACCO — York, Pa., Atlanta, Chicago, Denver, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, Portland, San Francisco, Bridgeport, Conn.

AMERICAN CHAIN DIVISION
AMERICAN CHAIN & CABLE

Industry's Finest SLING CHAINS

Its Smokless for Your Safety

BREVITY—Identify by IEN - 2987 If you write the maker

the internal design and capacity of the spray nozzles used in a spraying operation often determine the cost and quality of that operation. See for yourself why Spraying Systems spray nozzles are the SPECIFIED nozzles of industry today. Write for Catalog 22 . . . the facts are all there.

SPRAYING SYSTEMS CO.
3208 Randolph Street
BELLWOOD • ILLINOIS

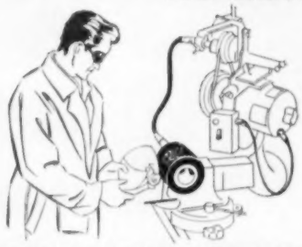
WRITE FOR
CATALOG 22 GENERAL CATALOG
CATALOG 23 PNEUMATIC ATOMIZING NOZZLE CATALOG

SPRAYING SYSTEMS SPRAY NOZZLES

the SPECIFIED nozzles for industrial use

BREVITY—Identify by IEN - 2988 If you write the maker

NEW, IMPROVED **NU-MATIC**



THE WHEEL WITH THE PNEUMATIC DRUM

With this Nu-Matic wheel the abrasive belt rides on a cushion of air contained in a rubber drum. Different pressures in the drum and different grits provide varied surface finishes. Deflate, and belts can be changed easily and quickly for grinding, sanding or polishing. Cut your labor, production and inventory costs with Nu-Matic grinding units. Adapters for ⅜"-11 or ½"-13 power equipment. (Specify size.)

Adaptable to bench, portable or flexible shaft power.

NU-MATIC GRINDERS, INC., 10304 W. McNICHOLS RD.
Detroit 21, Michigan UNiversity 3-2573

BREVITY—Identify by IEN - 2989 If you write the maker

UNIVERSAL INDUSTRIAL CONVEYOR
Low First Cost . . . .
Low Maintenance

- Removable sides to permit handling large cartons or parts.
- Motor totally enclosed inside conveyor body easily accessible through removable ventilating panel.
- Elevates to desired height with simple hoisting mechanism.
- Driven by means of roller chain to roller bearing equipped gear box.
- Main drive shaft and idler pulley operate on double-sealed ball bearing.
- Standard belt width, 12 inches. Other widths can be furnished to meet your requirements.
- Belt speed, 74 F.P.M.—adjustable if desired.

INDUSTRIAL ENGINEERING & MFG. CO., INC.
BRIMFIELD, INDIANA, U.S.A.

BREVITY—Identify by IEN - 2990 If you write the maker

WELDING . . Butt type portable unit for bandsaw blades, flat and contour

Source: BRENNAN MFG. CO.
226-30 Seeley St., Brooklyn 18, N. Y.

Model L is a new portable butt-welding machine for operation on 110-volt 60-cycle ac. to join the ends of a bandsaw blade that has been broken to insert through a work piece to make an internal cut. The welder will join the ends of the .050-in. round contour blade. It will weld flat blades to ½ in. in width. Dimensions are about 8 by 7 by 12 inches.

The jaws are made of copper and are fitted with work clamps. Heat is set at a toggle switch. A lever is depressed to make the weld and a button is provided to initiate an annealing heat. The assembly includes a built-in motor-driven grinding wheel to remove flash and leave a smooth connection in the blade.

BREVITY—Identify by IEN - 2991 If you write the maker

PUNCHING . . Hand tool set for washers, gaskets, ¼ to 1 inch

Source: RINI METALS CO.
1516-20 Walnut St., Philadelphia 2, Pa.

A center punch and holder and nine interchangeable cutting heads are packed in a metal box to make up this new Centr-O-Punch set of hand tools to cut washers and gaskets from leather, rubber, canvas, felt and soft metals in a range of sizes from ¼ to 1 in. overall.

Spring backing for the center punch permits the locating point to stand beyond the cutting edge for initial positioning and to retract as the cut is made. The spring then acts as an ejector to remove the cut material. The cutting heads are made of alloy steel with blue-temper finish. Their straight inside wall permits regrinding as required without change in diameter. In addition to the set, single cutters are available in a range of additional sizes to 2½ in. diameter.

BREVITY—Identify by IEN - 2992 If you write the maker

RESEARCH . . Progress report on 337 research jobs published in 56-page booklet

Armour Research Foundation of Illinois Institute of Technology Technology Center, Chicago 16, Ill.

"Research for Industry" titles the Foundation's illustrated summary of the work performed during 1949-50 in a variety of research activities. These are grouped by general subject so you can see what it is doing in fields such as chemistry, metals, ceramics, mechanics, magnetic recorders.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2993 If you write the maker

FLAT SPRING STEEL

Roebling . . . for absolutely uniform quality

FOR FLAPPER VALVES, shoe shanks, measuring tapes! For steel rules, curtain springs, snap springs, lock springs and a thousand and one other exacting uses, Roebling high carbon flat spring steel is unsurpassed.

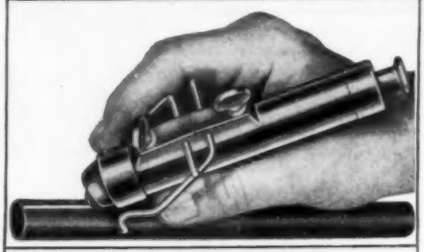
Roebling's *complete* manufacturing facilities bring positive quality control and assure a product that saves users' preparation time . . . brings faster, smoother operation. And Roebling flat spring steel is made annealed, hard rolled untempered; scaleless tempered; tempered and polished, blued and strawed.

Large quantities of Roebling flat, round and shaped wires are required in the rearmament program, but we will do our best to meet your delivery needs. John A. Roebling's Sons Company, Trenton 2, New Jersey.

ROEBLING

BREVITY—Identify by IEN - 2994 If you write the maker

POSITIVE AND FAST IDENTIFICATION
ALLOYS, COMPOSITION OR CONTENTS



BEUGLER DE LUXE STRIPER
with double adjustable guides

Used in striping bar stock as to its alloy; cable as to its destination; fabric as to its composition; pipe, tubing, crates and boxes as to their contents.

Operates in any position, with any color paint, enamel or striping lacquer. De Luxe Kit with three size stripes, $8.95. If your supply house can not furnish them, write us direct.

BEUGLER MFG. COMPANY
Western Ave. & Second St. Los Angeles 4, Calif.

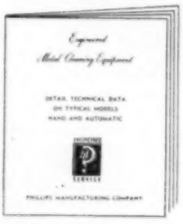
BREVITY—Identify by IEN - 2995 If you write the maker

THE DIRT DRIPS OFF

Leaves the work clean and dry when you suspend it in vapor inside a Phillips degreaser

What work? How? Why? How big? Manual? Automatic?

The answers are all in our new 48-page illustrated booklet, "Engineered Metal Cleaning Equipment", covering machines for both production and maintenance on parts from screws to railway motors.



Write for your copy.

PHILLIPS MANUFACTURING COMPANY
3471 Touhy Avenue Chicago 45, Ill.

BREVITY—Identify by IEN - 2996 If you write the maker

DETECTO SCALES

There's a precision-accurate Detecto Scale for your specific weighing and counting need. The Detecto helps increase production, yet assures you maximum accuracy by making slightest weight discrepancies immediately visible.

DETECTO-GRAM RATIO COUNTING SCALE

Another Detecto-Gram Scale to speed counting operations. Model #1743 has a special counting tray attached to the beam for use when counting in odd amounts.

Write for Literature

DETECTO SCALES · INC.
MAKERS OF FINE SCALES SINCE 1900
553E PARK AVENUE • BROOKLYN 5, N. Y.
SCALE ENGINEERS IN ALL PRINCIPAL CITIES

▼ BREVITY—Identify by IEN - 2997 if you write the maker ▼

Many Industries Use

METLKOR

(Reg. U. S. Pat. Off.)

CYLINDER BRUSHES

—when ARRANGEMENT OF MATERIALS is required in manufacturing.

FOR EXAMPLE:

METLKORS raise loose threads from fabrics being sheared, to bring them to the knives; one of many textile uses.

METLKORS give suede leather its characteristic soft, even surface, arranging fibers in a uniform "pattern."

METLKORS move up to and hold certain materials in "cutting position."

HAVE YOU AN ARRANGING OPERATION TO PERFORM?

If so, consider these features of METLKOR Cylinder Brushes. They have:

CORES of aluminum, cold drawn steel, bronze, stainless steel that cannot sag or split, and are practically indestructible.

BRISTLE (including nylon) suited to the use intended. Renewable when worn.

OTHER METLKORS ARE USED FOR REMOVING AND APPLYING PURPOSES.

THE MOST ECONOMICAL BRUSHES YOU CAN BUY AND USE

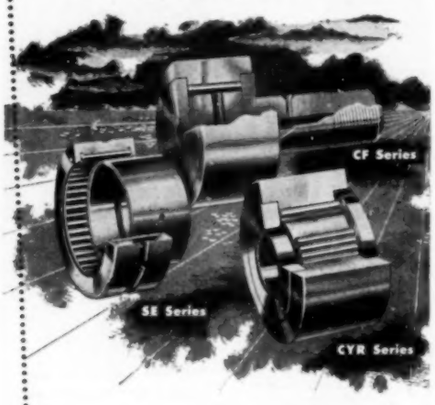
Write for illustrated catalog about the METLKOR for your particular needs.

M. W. JENKINS' SONS, INC. P. O. Box 27 Cedar Gr., Essex Co., N. J.

▼ BREVITY—Identify by IEN - 2998 if you write the maker ▼

"longer life and greater efficiency"

with McGILL® MULTIROL® Bearings



Compared with friction hampered plain bearings McGILL MULTIROL full type roller bearings resist wear because of their easily lubricated roller line contact with raceways. Longer life and greater efficiency is the natural result of the constant precision maintained in the bearing. Lubrication is simplified and required much less frequently. Maintenance is free of costly down time for periodical adjustments and bearing replacement.

MULTIROL bearings are your assurance of adding these advantages to the operation of your machinery. Millions in service to date prove such exclusive features as one piece outer race and roller retaining end shoulders, and lubrication reservoirs above roller ends in the SE Series. CF and CYR Series have thick outer race sections for heavy shock load in cam action applications. Mounting is possible with or without stud.

Write for Bulletins on MULTIROL Bearing series.

McGILL MANUFACTURING CO., INC., BEARING DIVISION
100 N. LAFAYETTE ST., VALPARAISO, INDIANA

McGILL® precision bearings

▼ BREVITY—Identify by IEN - 3000 if you write the maker ▼

FEEDING . . Electric vibrating unit advances work pieces on circular paths

Source: SYNTRON CO.
410 Lexington Ave., Homer City, Pa.

Multiple tracks up which small, essentially uniform, work pieces are fed by rotary vibrating action can now be specified in place of the single track carried in a previous design IEN-9855-50 of the company's workpiece feeder. The small models, EB-01 and EB-1, can be furnished with two feed tracks. The larger Models EB-2, EB-4 and EB-5 can be equipped with a maximum of four tracks.

Work movement on each track is the same. Discharges can be located at one point or at various points around the circumference of the bowl. Work loaded into the center of the assembly finds its own way to the entering end of the tracks which spiral upward to tube-type outlets.

▼ BREVITY—Identify by IEN - 3001 if you write the maker ▼

WATER PROOFING . . Liquid solution to treat masonry contains silicone

Source: PRIMA PRODUCTS, INC.
10 E. 40th St., 30th Floor, New York 16, N. Y.

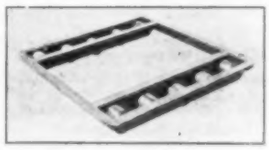
Test report on request

Siliphane trade names new liquid containing silicone for application on above-grade porous masonry walls. The liquid penetrates into the masonry, coats it with a microscopically thin water-repellent film. It does not change the appearance of the masonry and can be applied in temperatures to 15 deg. above zero. The material lists at about $5 per gallon.

▼ BREVITY—Identify by IEN - 3002 if you write the maker ▼

HANDLING . . Ten roller dolly to carry pallets over slatted floors

Source: FRANK L. ROBINSON CO.
1704-8 Broadway, Oakland 12, Calif.

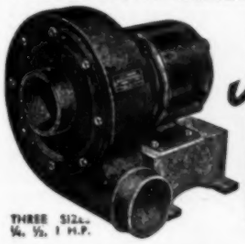


Load rating is 4,000 lb. for this new steel-frame dolly. It is designed to carry loaded pallets for stacking into refrigerator cars. These cars have slatted floors to permit air circulation. The slats interfere with normal wheeled traffic. The new dolly bridges the slat openings, rolls smoothly on the slats. The ten rolls are equipped with ball bearings and are mounted on hexagon axles. Four sizes have frames measuring 30 by 30 in. to 48 by 48 inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

▼ BREVITY—Identify by IEN - 3003 if you write the maker ▼

READY TO RUN—IMMEDIATE DELIVERY!



THREE SIZES ¼, ½, 1 H.P.

Sutton MOTOR DRIVEN **PRESSURE BLOWERS**

MADE OF LIGHTWEIGHT CAST ALUMINUM ALLOY

CENTRIFUGAL TYPE designed to deliver an even, non-pulsating flow of air for blowing or exhausting. Universal as to rotation and discharge. Direction of discharge may be changed to any of eight 45 degree positions. • Housing, base, supported, and impeller are constructed of cast aluminum alloy to reduce weight and increase strength. Straight wall construction reduces windage and increases efficiency. • Powered by standard 3450 r.p.m. direct-connected 60-cycle ball bearing motor in choice of open or totally enclosed types. Three sizes: ¼, ½ and 1 H.P. with capacities from 100 to 800 cu. ft. per min. at static pressures from ½" to 6".

USED FOR removing dust from grinding, buffing, and polishing equipments, for conveying cotton, wool, saw dust, shavings, etc.; for exhausting smoke fumes and vapor; to furnish blast for forges, furnaces, etc., and for cooling and drying purposes.

WRITE FOR LITERATURE AND PRICES

Sutton *Manufacturing Corp.*
112 W. WILSON AVENUE NORFOLK, VIRGINIA

▼ BREVITY—Identify by IEN - 3004 if you write the maker ▼

PLATEGRIP

PLATE FASTENERS FOR CONVEYOR BELTS

Make strong dust-tight, water-tight joints in belts of any width. Special design spreads tension uniformly across belt, allow natural troughing of belt and assures smooth operation over flat, crowned or take-up pulleys. Sizes for belts of from ¼" to 1½" thickness. *Write for Catalog Sheet.*

Also Repair Plates for Mending Belts.

ARMSTRONG BRAY & CO.
5380 Northwest Highway • CHICAGO 30, U.S.A.

▼ BREVITY—Identify by IEN - 3005 if you write the maker ▼

Exclusive 7" ERASER saves your drawings

● The exclusive 7" rubber eraser of the Bruning electric erasing machine saves your valuable drawings. It prevents those costly eraser fly-outs which are unavoidable with short erasers of ordinary machines.

● Stays cool, even with continuous use, and has lifetime lubrication. There's no wobble, no vibration—just easy, accurate erasures made *in seconds*.

● Write today for free folder, "Exclusive Erasing Advantages." It gives you all the reasons why Bruning is your *best buy* in electric erasers.

BRUNING

CHARLES BRUNING COMPANY, INC.
Dept. H-31, 100 Roade Street
New York 13, N. Y.

▼ BREVITY—Identify by IEN - 3006 if you write the maker ▼

GET THE FACTS NOW ON THIS REVOLUTIONARY NON-SLIP FLOOR PLATE

A. W. ALGRIP Eliminates Costly Slipping Accidents

- A. W. ALGRIP is the one and only *Abrasive Rolled Steel Floor Plate* in the World.
- Wet or dry it prevents slipping!
- Even on steep inclines A. W. ALGRIP won't let you slip.
- A. W. ALGRIP has over 1001 plant and product applications.
- Easy to install, A. W. ALGRIP never requires maintenance.

THERE IS NEVER A SLIP—ON A. W. ALGRIP

Free 8-Page Booklet giving all the important data you need on A. W. ALGRIP. Write for booklet B-3.

A. W. ALGRIP
ABRASIVE ROLLED STEEL FLOOR PLATE

Product of **ALAN WOOD STEEL COMPANY**
Conshohocken, Penna.
125 Years of Iron and Steel Making Experience

Send me a copy of your 8-page A. W. ALGRIP Booklet B-3

Name_____
Title_____ Company_____
Address_____
City_____ Zone_____ State_____

Other Products: PERMACLAD Stainless Clad Steel • A. W. SUPER-DIAMOND Floor Plate • Plates • Sheets • Strip • (Alloys and Special Grades)

BREVITY—Identify by IEN - 3007 If you write the maker

NO HELPERS--

SABIN
One-Man
BARREL TRUCK

Picking up barrel and drum loads, weighing as much as 800 pounds, is now an easy job for One Man with a Sabin Type "L-3" Barrel Truck. Operation is very simple. You run truck up to container, hook on at top, then pull back on handle to pick up load.

THIRD WHEEL FEATURE insures better balance and added safety in moving loads.

WRITE FOR BULLETIN NO. 48-A

Other Sabin Trucks: KEG, BOX, CARBOY, WIRE COIL, TOTE PAN, etc. Write for Bulletin No. 48.

THE SABIN MACHINE CO.
6540 Carnegie Avenue
CLEVELAND 3, OHIO

BREVITY—Identify by IEN - 3008 If you write the maker

SPRAY NOZZLES and ACCESSORIES

Delavan now offers a complete line of spray nozzles and accessories to meet every spraying requirement. The name Delavan is your assurance of top quality and outstanding performance.

WRITE FOR CATALOG NO. 30

DELAVAN MANUFACTURING CO.
3009 SIXTH AVENUE
DES MOINES 13, IOWA

BREVITY—Identify by IEN - 3009 If you write the maker

No More Frozen or Galled STUDS *(even at 1800 F.!)* Try this Amazing Money Saver...

FREE Test Sample of the NEW FEL-PRO C-5 "HI-TEMP" THREAD COMPOUND

Eliminates Pitting of Stainless, and Alloy Steels at all Temperatures!

CUT costly stud breakage, heater dismantling time, pitting of metal surfaces!

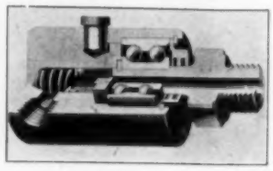
We'd like to send you a free sample of the new Fel-Pro C-5 "Hi-Temp" Thread Compound to try on your toughest thread compound problems, including alloy and stainless steels. Then you can see the amazing, money-saving results being obtained by the nation's largest refineries, utilities and process industries. Fel-Pro's exclusive Colloidal-Copper formula keeps metal parts separated, regardless of temperatures. Its neutral action solves the alloy and stainless steel pitting problems. One utility company reports that heater dismantling time has been cut from two days to four hours, by the use of Fel-Pro C-5 "Hi-Temp". Why not see what "Hi-Temp" can do for you... get your free sample and complete data sheet—*write today!*

FELT PRODUCTS MFG. CO.
1643 Carroll Ave., Chicago 7, Illinois

BREVITY—Identify by IEN - 3010 If you write the maker

PIPE FITTING . . Rotary joint connects stationary and rotating lines

Source: FAWICK AIRFLEX CO.
9918 Clinton Road, Cleveland 11, Ohio



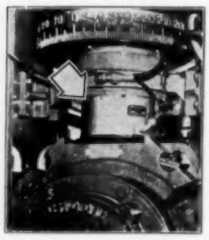
Rotorseal identifies a line of rotary joints, initially developed by the company for its own use to introduce compressed air into rotating members of its expanding-tube clutches and brakes. The single-passage design illustrated and the double-passage assembly, previously described IEN-413-50, are now available for general use in handling air, gases or liquids between stationary and rotating equipment.

Sizes range from ¼ to 1½-in. pipe-thread connections in the single-passage design and from ¼ to 1 in. in the multiple-passage assembly. Permissible operating speed is to 2,500 rpm. with maximum operating pressure at 150 pounds. Leakage is prevented by the internal spring-backed seal assembled in the stationary head and applied against the inner race of the ball bearing in which the rotating member is mounted.

BREVITY—Identify by IEN - 3011 If you write the maker

GAGE . . Machine load indicator actuated by resistance wire elements

Source: BALDWIN-LIMA-HAMILTON CORP.
Paschall Post Office, Philadelphia 42, Pa.



New application of the company's Type SR-4 strain-gage elements and bridge circuit has been made in connection with cold-strip rolling mills to indicate load on the rolls. In one specific installation on a mill reducing aluminum strip from .125 in. to .025 in., two gage assemblies are employed reading 600,000 lb. each.

The load-measuring unit is a short steel column in which the Type SR-4 strain gages are bonded. They then are connected electrically into the bridge circuit to lead to various instruments the company is prepared to supply. These include indicators and recorders that can be calibrated directly in pounds or other preferred units. The cells are compensated for temperature variation. Overall accuracy is within one per cent of full scale.

BREVITY—Identify by IEN - 3012 If you write the maker

GAGES . . Adjustable height unit to use with gage blocks for inspection work

General Mills Inc.
2008-12 E. Hennepin Ave., Minneapolis 13, Minn.

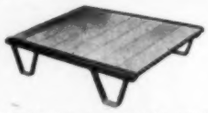
Limited supply is in stock of an adjustable height gage developed by the company's Mechanical Division. The unit is intended for service with standard gage blocks in precision inspection work. How it is used is shown by sequence pictures in a 4-page folder titled, "Gauge Block Jack".

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 3013 If you write the maker

In production or in storage

IRONBOUND EQUIPMENT HANDLES SMALL PARTS MORE EFFICIENTLY



Standard 2-way entry bolted type skid built to handle loads up to 5 tons.

Standard box top welded to standard skid. Available too, with removable boxes. Handles many items in production and storage.

Flexible arrangement of boxes and skids permits tiering and stacking to meet your individual requirements. Provides quick availability, easy handling, or storage for complete units or parts.

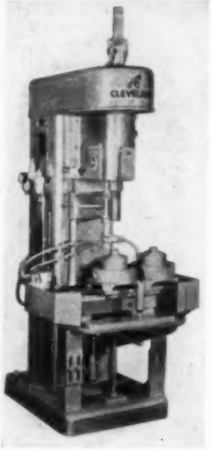
Each of the units illustrated has an important use in modern industry. Ironbound skid platforms and box tops are prime sources of increased plant capacity so vitally needed today. Our representative can help you to increase your output and plant space. Catalog GP-7 may help you, too!

IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
50 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

BREVITY—Identify by IEN - 3014 If you write the maker

Cut Your Tapping Costs with CLEVELAND TAPPERS



On Tapping, Threading, Drilling, Spot-facing, Reaming, and Chamfering operations, the chances are that CLEVELAND engineers can save you money and valuable working time by designing a CLEVELAND Tapping Machine which will not only combine several operations but also tap groups of holes at one stroke of the machine. *Check with CLEVELAND first.*

If you would like recommendations on a machine, submit prints, specifications, and sample parts. Write for your copy of the CLEVELAND Production Tapping Guide No. Y-2.

This Cleveland Tapping Machine is set up on a munitions job, tapping a 1 13/32", 16-pitch Buttress thread in SAE 4340 steel tubing hardened to 35 to 37 Rockwell.

THE CLEVELAND TAPPING MACHINE CO.
A Subsidiary of AUTOMATIC STEEL PRODUCTS, INC.
CANTON 6, OHIO

BREVITY—Identify by IEN - 3015 If you write the maker

NEW Norgren

MICRO-FOG Lubricator

Revolutionary Progress in Air Line Lubrication

This new Micro-Fog Lubricator by "The Pioneer in Oil Fog Lubrication" breaks each drop of oil down into extremely fine uniform size particles (dia. 2 microns—.00007874"—or less) that REMAIN IN SUSPENSION for an indefinite period of time.

- **Micro-Fog** travels far greater distances. Location of lubricator in relation to units served is no longer a critical factor.
- **Micro-Fog** can be uniformly distributed to several outlets—serving multiple units operating simultaneously.
- **Possibility** of flooding lines or equipment is reduced to the very minimum.
- **Air flow requirement** is greatly reduced. Constant, uniform delivery of oil fog is precision-controlled—down to as little as one drop in 20 minutes delivered into the air stream, if required.
- **Accomplishes** more thorough lubrication. Completely automatic. Fully-visible oil feed and supply.
- **Product of years** of research and development, plus over 20 years know-how in air line lubrication. Fully field-tested and approved in many industries.
- **Ideal for high speed grinding spindles... small air tools...gear boxes...multiple taps & drills...air sanders...many other exacting applications.**

Write for BULLETIN 425—
C. A. Norgren Co., 232 Santa Fe Drive, Denver 9, Colorado

Norgren 25th Year of Progress

LUBRICATORS, REGULATORS, FILTERS, VALVES, HOSE ASSEMBLIES

▼ BREVITY—Identify by IEN - 3017 if you write the maker ▼

CUT HANDLING COSTS with these COMFORTABLE, HEAVY-DUTY AO GLOVES!

AO 5X264 and 5X284 gloves can be real money-savers. Cotton fleece backs not only reduce cost but add flexibility and comfort.

Both gloves are heavy-duty with heavier leather in palm or work area and steel sewed seams. Leather palm extends over heel of hand, eliminating an uncomfortable bib patch.

Other features include no seams around index finger, heavy, reinforcing steel stapled strap around thumb crotch . . . heavyweight safety duck cuffs with heavy tape binding and elastic on back for snug fit. Ask your AO Safety Products Representative for 5X284 if you prefer seams on back of fingers. Leather is chrome tanned cowhide.

American Optical Company — Safety Products Division

SOUTHBRIDGE, MASSACHUSETTS • BRANCHES IN PRINCIPAL CITIES

▼ BREVITY—Identify by IEN - 3018 if you write the maker ▼

SPECIFY GRC WING NUTS

1. TO DO A GOOD JOB
2. LOOK BETTER
3. COST LESS!

GRC offers quick service, low cost on strong, good-looking wing nuts of rust-proof zinc alloy. All commercial finishes, all popular thread sizes. Wing nuts with special threads or untapped wing nuts also available. Inquiries invited for special wing nut designs.

Write today for samples and prices

GRIES REPRODUCER CORP.

797 EAST 132nd ST., NEW YORK 54 MOtt Haven 9-2476

▼ BREVITY—Identify by IEN - 3019 if you write the maker ▼

a toothbrush to scrub an elephant?

. . . no more ridiculous than scrubbing and maintaining floors with old-fashioned soap and water methods and materials.

Hillyard modern floor care methods save up to 50% in labor costs. Hillyard products are tailor-made for particular jobs to enhance the beauty and prolong the life of any floor . . . every product is quick acting, safe and easy to use and safe underfoot. U/L approved SUPER SHINE-ALL for instance, is specifically designed as an all-purpose, neutral chemical cleaner to do a thorough job WITHOUT RINSING, in half the time. SUPER HIL-TONE, Hillyard's non-greasy dressing, formulated to hold down dust, eliminates frequent dusting, speeds maintenance of floors, woodwork, furniture.

That's why architects, flooring manufacturers, building managers, flooring contractors and maintenance men PREFER to endorse HILLYARD SPECIALIZED floor treatment products and equipment for practical care of floors in hospitals, schools, gymnasiums, factories, public and private buildings.

Want to learn how Hillyard can simplify your floor care? Just mail the coupon. No obligation.

Consult the Hillyard trained floor expert in your vicinity "The Hillyard Maintaineer"

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HILLYARD CHEMICAL CO.
ST. JOSEPH, MO. DEPT. D1-3

Please send us information on How to Cut Maintenance Costs in Half.

Name _____ Title _____
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Address _____
City _____ State _____

On Your Staff Not Your Payroll

BRANCHES AND WAREHOUSE STOCKS IN PRINCIPAL CITIES

▼ BREVITY—Identify by IEN - 3020 if you write the maker ▼

PATTERN MAKING . . Wax injector for production of "lost wax" pattern

Source: ALEXANDER SAUNDERS & CO.
97 Bedford St., New York 14, N. Y.

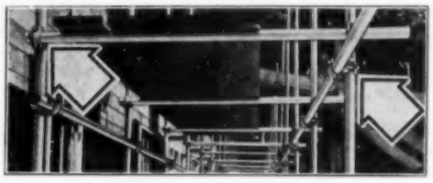
Model WP12 is new design of the company's wax-injecting press for manufacture of "lost wax" patterns, previously described IEN-11414-49. In this new design the pattern material is heated by oil circulating through a revolving drum and crosshead. Thermostatic control for maximum temperature to 400 deg. F. prevents overheating the hydraulic ram. There is a separate heating unit for the crosshead and discharge nozzle to maintain free flow of the wax. One section of the drum is cut out for access to the ram and crosshead. Ram pressure capacity is 1,500 lb. in maximum rating.

General assembly of the machine is the same as in the original design in which a turret carries four vertical cylindrical chambers mounted to index horizontally to bring the chambers, one at a time, into line with the hydraulic plunger and a top nozzle-equipped head. The chambers are filled with wax to be injected into the pattern mold which can be held by hand or in suitable clamping fixtures for contact with the nozzle. Each cylinder measures 3½ in. in diameter by 7 in. in effective length and has about 67 cu. in. capacity. Total capacity for the press is about 268 cubic inches.

▼ BREVITY—Identify by IEN - 3021 if you write the maker ▼

SCAFFOLD . . Quick acting clamps assemble with steel or aluminum tubes

Source: SAFWAY STEEL PRODUCTS INC.
6234 W. State St., Milwaukee 13, Wis.



Two designs of forged aluminum clamp combine with 6 to 13-ft. lengths of steel or ribbed aluminum tube to provide the required parts with which a scaffold can be erected quickly on a job or taken down for moving or for storage. One of the two clamp designs is a rigid unit to hold two tubes at right angles. The other is a swivel arrangement for assembly of diagonal bracing.

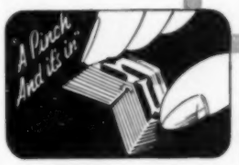
In both designs the jaws swing open to apply over the tubes and then are closed and a pivoted screw is swung into an open slot on the jaw end so a hexagon nut on the screw can be turned down and tightened. The screw ends are upset so the nuts cannot be lost. The new design can be employed in combination with the company's standard frame-type scaffold. Upright members can be extended safely as high as 200 feet. Bayonet-type end fittings are provided to connect tube lengths in assembly of the scaffold for this purpose.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 3022 if you write the maker ▼

NO DELAY!

. . . use PANNIER National Rubber Type & Holders



"pinch" the exclusive dove-tail winged flange type into matching holder slot and there it stays without springs, wires or pins until you remove it. It can't fall out or shake loose.

• You lose no time waiting for dies or inserts to mark rush jobs when you use Pannier National Interchangeable Rubber Type and Holders. You make your own set-ups as you need them. Just

Both type and holders are available for every mill and industrial need. Ask for Bulletin NT-2.

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THE PANNIER CORPORATION
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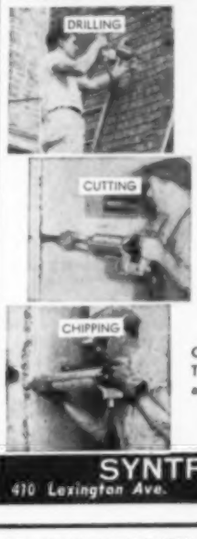
Pittsburgh 12, Pa.

▼ BREVITY—Identify by IEN - 3023 if you write the maker ▼

SYNTRON

ELECTRIC HAMMERS



Speed Up These Jobs!

Save Money and Time

Their powerful 3600 blows per minute from your 110 volt A.C. light line do these, and scores of other jobs, many times faster than by hand.

Only one working part—THE PISTON—means a long low maintenance life or service.

Write for catalog data.

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

▼ BREVITY—Identify by IEN - 3024 if you write the maker ▼

More time for creative drafting!

Kodagraph Autopositive Paper has helped the Cleveland Crane and Engineering Company turn hours of costly retracing time into hours of creative drafting time.

Here are two typical examples which may suggest savings in your work.

Time saved . . . when drawings must be changed. Instead of making a new drawing—which in many cases would be 85% retracing—Cleveland Crane reproduces the original on low-cost Kodagraph Autopositive Paper. Then the draftsman eradicates the unwanted detail from this positive photographic intermediate . . . and substitutes the new design. Thus, a brand-new "original" is prepared in a fraction of the usual time.

Time saved . . . when drawings must be combined. Often the designs of several vendor-products must be included in a Cleveland Crane drawing. *It used to be a tedious retracing problem* . . . but now, the vendors' prints, which are often opaque, are reproduced on a sheet of Autopositive. Exposure . . . is in a standard print-making machine (above); processing . . . is in standard photographic solutions—a room light operation all the way. The result is a sparkling, *positive* intermediate—*obtained in one step*—dense photographic black lines on an evenly translucent, white paper base. To this, the draftsman simply adds supplementary detail . . . and the job is completed hours—even days—ahead of the old schedule.

Learn other ways revolutionary Kodagraph Autopositive Paper can help you. *Write today* for a free copy of the new illustrated booklet, "Modern Drawing and Document Reproduction."

EASTMAN KODAK COMPANY
Industrial Photographic Division
Rochester 4, N. Y.

Kodak

BREVITY—Identify by IEN - 3026 If you write the maker

STURTEVANT ROTARY FINE CRUSHERS

Crush or Granulate to Fine, Even Sizes without Excess Dust...

Cross section view illustrating the crushing action.

These rugged crushers speed output of fines, cut reduction costs. Desired fineness is quickly obtained by regulating hand wheel. "Open-door" accessibility permits fast, easy cleaning. They crush fine . . . crush fast and do not clog. Available in output capacities from 1 to 30 tons-per-hour. Write for catalog.

STURTEVANT MILL COMPANY
113 CLAYTON STREET, BOSTON 24, MASS.

BREVITY—Identify by IEN - 3027 If you write the maker

RCS SUPER SAW AIR COOLED PATS. PEND.

Saves you more actual time, right on the job, than any other tool in your kit!

Roughing in for toilet bowl thru oak flooring completed in less than three minutes.

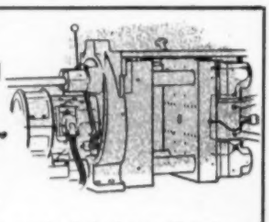
- **NO STARTING HOLE NEEDED**...Simply place guide next to material and "rock" tool into an upright position.
- **CUTS RIGHT THRU IMBEDDED NAILS**...wood, plaster, iron pipe, sheet metal and most other materials are easily cut—even in cramped quarters!
- **FITS HEAVY DUTY ¼" or ⅜" DRILL**...as easy as changing bits! Overall length only 10¾"; weight only 3 lbs. 6 ozs.
- **BUILT FOR CONSTANT DUTY OPERATION**... Built-in blower keeps Super-Saw cool even when used continuously and blows sawdust away from cutting line. Replaceable Oilite, phosphor bronze and high speed ball bearings throughout.

Write for Bulletin No. TH

R.C.S. TOOL SALES CORPORATION
JOLIET, ILLINOIS, U.S.A.

BREVITY—Identify by IEN - 3028 If you write the maker

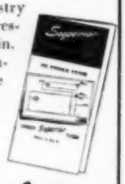
When the Pressure's On ...Specify *Superior* Tubing



Whenever there's a tough job for fine small tubing to do, Superior is the tube to specify.

An example is found in hydraulic applications for which Superior's technology in tubing produces seamless steel tubing to meet all Joint Industry Conference Hydraulic Standards for all pressure ranges from 0 to above 3,000 lbs./sq. in.

For complete information and specifications on Superior Hydraulic Tubing write today for Bulletin 38. For general information on Superior production ask for Bulletin 32. Address Superior Tube Company, 2016 Germantown Ave., Norristown, Pennsylvania.



Superior

THE BIG NAME IN SMALL TUBING

West Coast: Pacific Tube Company
5710 Smithway St., Los Angeles 22, Calif. . . . ANgelus 2-2151

All analyses .010" to ⅝" O.D.
Certain analyses (.035" max. wall) up to 1⅜" O.D.

BREVITY—Identify by IEN - 3029 If you write the maker

STORING . . Channel and fittings for rack assembly and shelf adjustment

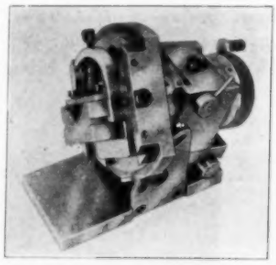
Source: UNISTRUT PRODUCTS CO.
1011-15 W. Washington St., Chicago 7, Ill.

Uni-Clip is a new spring-steel fitting that rides in the company's standard Unistrut channel to serve as an adjustable support for shelving placed at desired height on the vertical channel members. The fittings snap into and out of position, adjust up and down. Wood or plywood shelves can be supported as shown in the illustration.

BREVITY—Identify by IEN - 3030 If you write the maker

INDEXING . . Precision fixture to position work on a grinding machine

Source: STAR GAUGE CO.
259-63 Oak Grove Ave., Springfield 9, Mass.



Sine-A-Dex is a new graduated rotatable index head with mounting on a sine plate for positioning on a grinding-machine table. The head carries a face plate with a built-in V-block that can be set off center in two directions to grind rectangular work having radii on the corners. Two vernier rings assist in work setup. They read angles on both sides of a reference line. There is a 12-position index plate and crank at the rear along with means to lock a set position.

Work capacity is for rounds to 1½ in. in diameter or $1\frac{1}{16}$ in. in square section. Overall dimensions are 9 by 5 by 5 inches. Weight is 18 pounds.

BREVITY—Identify by IEN - 3031 If you write the maker

MANAGEMENT . . Booklet on small business reports result of survey on its financial needs

National Association of Manufacturers
14 W. 49th St., New York 20, N. Y.

Needs and problems of small manufacturing businesses are reported in new 48-page booklet which summarizes the results of a survey taken among the small manufacturers themselves. Title is "Financing Small Business." It describes many aspects including sources of funds, government and small business.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3032 If you write the maker

GRIPPING FORCE 15 TIMES AIR LINE PRESSURE

Speedy Air Vise helps you do dozens of operations faster, better, cheaper—by air pressure! Foot control valve opens and shuts vise instantly, leaving *both* hands free to produce *more!* Jaw opens up to 3 inches, holds castings, parts, jigs, etc. Compact and trouble-free.

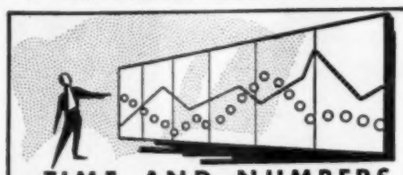
Complete with Foot Control, Air Hose and Fittings.....only **$29.90**

Prompt Delivery from Your Supplier or Write Direct

W. E. BROWN CORPORATION • 5730 Armitage Ave. • Chicago 39, Ill.

AIR REGULATORS • AIR FILTERS • AIR GUNS • PORTABLE COMPRESSORS

BREVITY—Identify by IEN - 3033 If you write the maker

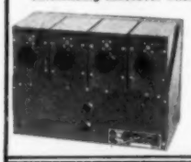


TIME AND NUMBERS

Do you need a permanent record of specific times and numbers that apply to your laboratory or production work? Streeter-Amet has the instrument which will accurately and speedily record either numbers or time or both at the same time on paper tape for easy readability.

The counter operates by any means capable of supplying a switch closure or an electrical impulse. Counts may be indexed by time or number printed alongside the count.

For high speed counting of a predetermined number of completed articles, the Streeter-Amet Predetermined Counter automatically counts and then shuts off or controls associated machinery when the predetermined number is reached. An outstanding timesaver when packing a given number of small articles in a carton or bottle and measuring lengths of wire or sheets in a bundle.



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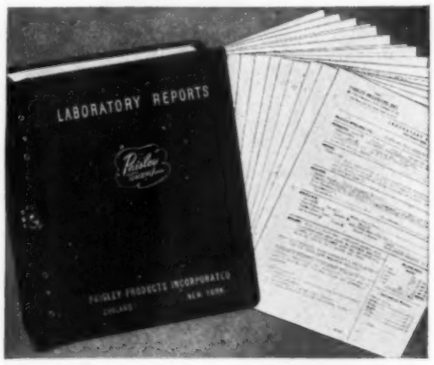
4101 N. RAVENSWOOD AVE. CHICAGO 13, ILL.

BREVITY—Identify by IEN - 3034 If you write the maker



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1770 Canalport Ave., Chicago 16

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to hundreds of products

Complete, Seamless-Precision Fabricated to order

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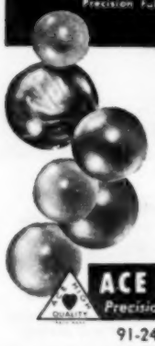

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- Variety of plastic materials
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Complete facilities for fabricating plastic parts for all industries. Estimates submitted promptly upon receipt of your blueprints or specifications.

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Precision Plastic Fabricators and Extruders

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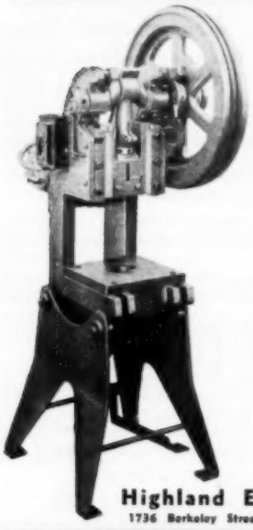
The HIGHLAND 20-Ton Press



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ALL STEEL

MORE { Stroke / Shut / Height

SPECIFICATIONS . .

Stroke (Standard)	3"
Throw of Crank	1½"
Crank Diameter	2½"
Maximum Shut Height	7"
Maximum Height Under Ram Up	19"
Adjustment of Ram	5"
Ram Opening for Punch Stem 2¼" deep	1 9/16"
Bolster Plate Plug Diameter	4½"
Bolster Plate Area	12" x 12"
Bolster Plate Thickness	1½"
Width Clear through Sideplates	9"
Depth Center Ram to Back of Gap Space	6"
Height Bolster from Floor	32"
Height from Floor to Center Crank	56"
Height Overall	80"
Area of Floor Space L to R and F to B	39" x 36"
Flywheel Diameter	28"
Weight of Flywheel	300 lbs.
Weight (Less Motor)	1000 lbs.
Bearings—Crank—Bronze	¼"
Speed Recommended Strokes per minute	120
Motor Recommended	1 H.P., 1200 R.P.M.
Ram Bearing Plate Cast Iron Inclinable (4 positions) Maximum	30°

Highland Engineering Co.

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THE "Easy-tote" TRADE MARK REGISTERED

DEPARTMENTAL TRUCK

USERS LIKE THEM . . . 70% REORDER

70% of users reorder . . . . proof of the lower cost, easier handling Easy-totes provide on countless, small, important jobs. Large and small plants use this all-purpose truck to out-maneuver and out-perform conventional hand trucks. There's nothing else like it. Three wheel arrangement, swivel caster in rear, low tilting baseplate (16" x 22"), adjustable hook and crank permit one man to handle loads up to 400 lbs. quickly, *without lifting injuries.* No need to "muscle the load" . . . . see 1-2-3- below. Only $28.00 . . . . . and deliveries are good at this time. NOW! Write for FREE Bulletin E-3.

Some territories open — write

THE EASY-TOTE PRODUCTS CO.

P. O. Box 86 Buffalo 17, N. Y.

Factory and Warehouse, Lancaster, N. Y.

OTHER MODELS AVAILABLE

BREVITY—Identify by IEN - 3039 If you write the maker

GAGE . . Adjustable micrometer reads thousandths in 12 in. range

Source: LESTER MICROMETER CO.
3208-12 Cedar Ave., Cleveland 15, Ohio

Tool steel carrier mounts a standard 1-in. micrometer head, provides a 3-in. throat dimension with a notched tool-steel blade on which the carrier is mounted. A tooth on the carrier registers with the notches and a spring clamp holds a set position for application of the micrometer head over that particular 1-in. division. The spring clamp protects against overloading. The notches are spaced with a variation within .0002 in. over the total 12 in. of travel.

Three standard sizes in the line read 12 to 24 in., 24 to 36 in. and 36 to 48 inches. Either a 12-in. or 24-in. range can be specified between 48 and 108 inches. All have a 3-in. throat.

BREVITY—Identify by IEN - 3040 If you write the maker

MOTOR . . Two-phase reversible, fractional horsepower, for instruments

Source: MINNEAPOLIS-HONEYWELL REGULATOR CO.
4456 Wayne Ave., Philadelphia 44, Pa.

At present for research work

New motor has been designed for use in servo-mechanisms as remote positioners, for bridge and potentiometric circuits, for laboratory equipment where a low-inertia drive motor can be used and for which the power requirements are low enough to permit field excitation from an electronic amplifier. It is suited for industrial recording instruments where positive positioning is a primary operating factor.

Line field rates about 9.5 watts and amplifier field power is about 4 watts. Motor load impedance ranges from 6,000 to 15,000 ohms with average at 12,000 ohms. Reversing is by shifting the current through 180 deg. in one field. Free speed is 1,620 rpm. Gear-reduction trains are available for 27, 54 and 162 rpm. to spread application of the new motor.

BREVITY—Identify by IEN - 3041 If you write the maker

PLASTIC FABRICATING . . Hot air gun, to 350 deg. F., for thermoplastics

Source: ALMAC ENGINEERING CO.
P. O. Box 5072-A, Pittsburgh 6, Pa.

Heat required to soften thermoplastic material for fabrication is supplied by this new hot-air gun. It connects to a source for air at 4 to 5 lb. to a 110-volt, 60-cycle ac. outlet for the electric element contained within the barrel. Air issues at the tip at about 350 deg. F. The company is prepared to supply a small air compressor when it is specified.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 3042 If you write the maker

FOR VOLATILE LIQUIDS . . .

Long Life Leak Proof

This is a fast pump famous for trouble free simplicity. No cylinders, pistons, rings or leather. Nylon diaphragm assures long service, positive shut - off eliminates evaporation.

No. G-S 750 PUMP — only $13.45 complete. Shipped on open account.

BIG, NEW SAFETY CATALOG

48 pages; hundreds of safety items fully described and illustrated.

Price list included.

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SAFETY EQUIPMENT FOR EVERY HAZARD

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your Royal dealer could give you 'One-month' delivery...maybe!

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If you can wait...you'll be wise to wait for Royal!

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ROYAL METAL MANUFACTURING COMPANY

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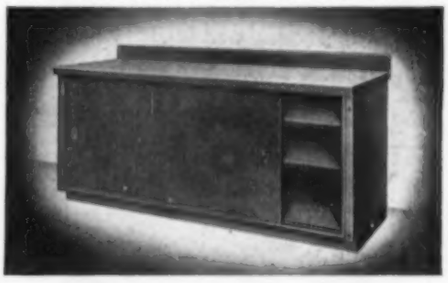
BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

BREVITY—Identify by IEN - 3045 If you write the maker



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SPS STANDARD PRESSED STEEL CO.

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BREVITY—Identify by IEN - 3046 if you write the maker

world's largest assortment of standard moulds for small mechanical rubber parts

SEE US BEFORE YOU DESIGN IT!

Save money! Check our huge assortment of standard moulds — chances are we have just the mould you need. Lowest possible prices—fast, efficient service! Get our new 44 page catalog, today.

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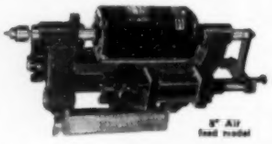
WRITE, WIRE, PHONE SPECIFICATIONS — TODAY!

BREVITY—Identify by IEN - 3047 if you write the maker

Precision Hi-Speed Drilling in Metal, Wood, Plastic or Composition—.004"-.156".

Check These 9 Features



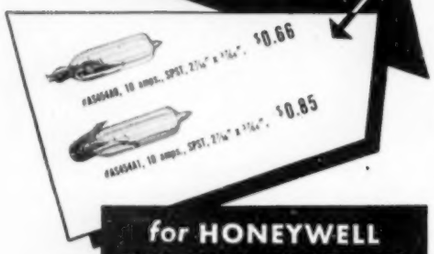
- Fingertip variable speed
- Fast approach air feed
- Hydraulic feed control
- Electric or manual controls
- Deep hole drill cleaning
- Sensitive precision spindle
- 1000-10,000, 2500-15,000 RPM
- Can be mounted at any angle, with hand or power feed
- Price 8" model, hand feed, from $130.00. Air feed model (as shown) from $238.50.

Write for helpful bulletin

The ELECTRO-MECHANO CO.
267 E. ERIE ST., MILWAUKEE 2, WIS.

BREVITY—Identify by IEN - 3048 if you write the maker

COMPARE THESE
ROCK BOTTOM PRICES



for HONEYWELL MERCURY SWITCHES

Type number ending in "0" is without lead . . . type number ending in "1" includes 7-inch, double cotton covered, extra-flexible lead. Prices are net for quantities of 100 and up.

Write for complete engineering specifications . . . or call the Honeywell branch office nearest you.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4456 Wayne Ave., Philadelphia 44, Pa. Offices in more than 80 principal cities of the United States, Canada and throughout the world.

Honeywell MERCURY SWITCHES

BREVITY—Identify by IEN - 3049 if you write the maker

ACCOUNTING . . Perforated cards and instruction booklet for small shop use

Source: BOECKELER INSTRUMENT CO.
29-33 E. Rillito St., Tucson, Ariz.

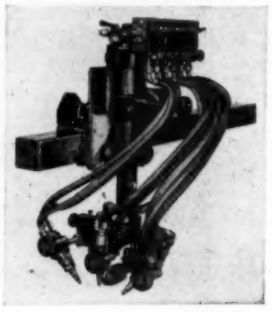
New design of accounting card, with identifying perforations around three sides, has been developed by the company for cost accounting in small shops such as those employing 5 to 20 employees. The perforations are coded to represent required factors and a punch is supplied by which selected perforations can be notched to the outside edge. The perforations that remain engage a selecting needle by which the cards for a given item can be lifted from a total assembly for analysis and summary.

The company offers to send a supply of cards on a free 60 day trial, together with a needle and punch and a booklet describing how to apply them to any small shop plant willing to test them in its own operations.

BREVITY—Identify by IEN - 3050 if you write the maker

CUTTING . . Multiple torch head prepares plate edges for arc welding

Source: AIR REDUCTION SALES CO.
1656 Lincoln Bldg., New York 17, N. Y.



Three torches are assembled in individually-adjustable mounting on this new Plate-Edge preparation device. The device itself applies on an acetylene cutting machine equipped with a 3-in. square torch bar. The free-floating design of the caster-wheel assembly permits bevel cutting on plate edges in which the plate does not lie perfectly flat. Following individual adjustment at the torches, control is centered at a master valve which opens or shuts off the gas supply.

BREVITY—Identify by IEN - 3051 if you write the maker

PLASTICS . . Military specifications for sheet, tube, rod of laminated plastic materials

Formica Co.
4612-22 Spring Grove Ave., Cincinnati 32, Ohio

Military specification numbers, issue dates, and corresponding designations of the company's materials are listed in new 4-page "Military Specifications for Armed Services". These cover sheet stock. Tube and rod are listed by Type designations under the JAN-P-79 classification.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3052 if you write the maker

Here's a better way to Mark Parts—in Colors!

Whether it be marking for dimensions, inspection, stocking or assembly identification, you'll find the Flo-master does a better job in less time. Its *felt tip* glides over any surface—metal, plastic, wood, etc. with broad bold lines or fine lines.

Flo-master semi-opaque inks—waterproof, non-smudging, fast-drying—come in a wide range of colors.

For light colored surfaces, use Transparent Inks with "POCKET SIZE" Flo-master. For dark, hard-to-mark surfaces, use Semi-opaque Inks with the "KING SIZE" Flo-master.

Adopt Flo-master Color Marking and see the difference!

Ask your supplier or write to Cushman & Denison Mfg. Co., 153 West 23rd Street, New York 11, N. Y.

Cap of "King Size" may be screwed to bench to serve as stand.

Flo-master FOUNTNBRUSH

BREVITY—Identify by IEN - 3053 if you write the maker

THIS SHOULD HAPPEN ONLY HALF AS OFTEN!

Eliminate half the cartridge replacements—select Cuno MICRO-KLEAN micronic filters.

Exclusive "graded density in depth" doubles dirt capacity, prevents clogging. Exclusive resinous impregnation and polymerization prevent shrinking, swelling, channeling.

When replacement *is* required—it's *quick* and *clean*. Housing easily disassembled.

Guaranteed densities. 10, 25, 50 microns. Capacities: from a few to over 800 gpm. Handles wide range of fluids, flow rates, viscosities.

Write for Bulletin MK-035. Cuno Engineering Corporation, 697 South Vine Street, Meriden, Connecticut.

CUNO
Fluid Conditioning
Removes More Sizes of Solids from More Types of Fluids

BREVITY—Identify by IEN - 3054 if you write the maker

A NEWS ADVERTISEMENT BY BYRON JACKSON CO.

NEW SMALL VLT PUMP . . . vertical . . . space-saving . . . barrel-mounted where npsh is a factor . . . features mechanical seal

Multi-stage vertical centrifugal for general industrial pumping of wide range of liquids including water, condensate, butane, propane and gasoline. Features BJ Mechanical Seal which eliminates packing troubles and overcomes leakage or contamination problems.

Mounted in barrel from which it takes suction. Barrel is of 6" pipe, closed at bottom and flanged at top. Two-inch pipe coupling suction nozzle is welded in barrel and a 1½" pipe coupling discharge is integral part of nozzle head. Discharge flow is past the seal faces, eliminating need of separate seal cooling line. For sump or tank pump service, barrel may be omitted.

Specifications: Motor sizes from 1½ to 10 hp. 3550 rpm, explosion-proof if needed. Capacities to 110 gpm. Maximum working pressure, 350 lbs. Maximum pumping temperature 250° F. Bronze impellers. Adjustable flange-type coupling.

Specify "VLT" on all inquiries.

BYRON JACKSON CO., PUMP DIVISION
Box 2017, Terminal Annex, Los Angeles 54

BREVITY—Identify by IEN - 3055 if you write the maker

Making a quality product is YOUR business.. Packaging it properly is OUR business!

THAT IS WHY . . .

so many companies with U. S. Government contracts requiring method II type packaging in flexible moisture-vapor proof barrier material, use AMSCO packaging equipment.

AMSCO equipment is specifically designed to properly fabricate, handle and seal barrier materials. During World War II, AMSCO pioneered in the development of dependable, diversified barrier packaging equipment.

Avoid the danger of improper packaging and great loss of money by rejects. SEND FOR YOUR COPY of AMSCO BOOK "BARRIER TYPE" Packaging for U. S. Government orders. Available at no charge. Write Dept. IEN.

IMPORTANT

Many Government contracts specify packaging in Polyethylene, Cellophant or Pliofilm. AMSCO has equipment for fabricating, handling and sealing these materials.

AMSCO
PACKAGING MACHINERY, INC.
31-31 48th Avenue, Long Island City 1, N. Y.
Specialists in diversified Packaging Equipment

▼ BREVITY—Identify by IEN - 3056 if you write the maker ◄▼

"NATIONAL"
Self Lubricating Bronze Bearings
Molded to Your Accurate Specifications

Our "DUCTILOY" bearings are made from a unique powder formula, perfected by "National" Engineers, that result in a bearing with properties possessed by no other bearing on the market. Our special alloy makes these bearings highly ductile and eliminates waste due to breakage at installation or from rough handling.
We are also very proud of our line of spherical bearings and of our hard won reputation for the delivery of intricate powdered metal parts, heretofore considered impossible to produce.
Applicable to all medium and light weight service, such as Automobile, Electrical Appliances, Farm Equipment, Domestic Appliances, such as Sweepers, Refrigerators, Washers, Portable Electric Tools, etc., and Industrial Machinery.

LET US HELP SOLVE YOUR BEARING, BUSHING AND SHAFT SEALING PROBLEMS

We are equipped to handle your requirements in any quantity.

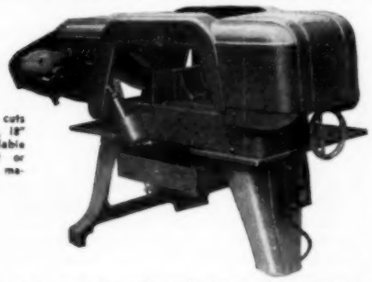
NATIONAL MOLDED PRODUCTS, INC.
Manufacturers of
Sintroy, Ductiloy and Tubeloy Bearings
1945 MILL STREET • ST. MARYS, PA.

▼ BREVITY—Identify by IEN - 3057 if you write the maker ◄▼

WE GO ALL OUT

to Maintain High Machining Standards and Close Tolerances

JOHNSON
METAL CUT-OFF
BAND SAWS



MODEL J cuts 18" rounds, 18" flats. Available as a wet or dry-cutting machine.

Accuracy in a saw depends entirely on the way it is built. . . . That's why we go the limit in maintaining high machining standards and close tolerances in the manufacture of Johnson Band Saws. YOU CAN'T BUY A BETTER SAW THAN A JOHNSON. For value, capacity, fast, continuous cutting action and economy, Johnson Saws lead the field. They will pay for themselves quickly and give dependable trouble-free service year after year.

MODEL B smaller machine shown at right . . . Does a man-size job. Cuts 5" rounds, 10" flats. Furnished with or without casters. Really portable, can be taken anywhere for on-the-job cutting.

THERE IS A DEALER NEAR YOU

JOHNSON MANUFACTURING CORP.
ALBION, MICHIGAN

▼ BREVITY—Identify by IEN - 3059 if you write the maker ◄▼

PRESS . . Motor driven inclinable, mounts on bench, rates 4-ton, 85 rpm.

Source: BENCHMASTER MFG. CO.
2950-54 W. Pico Blvd., Los Angeles 6, Calif.

New design of the company's motor-driven inclinable press, previously described IEN-9414-50, provides for open height measuring 8-in. as compared to the previous 6¾ in. and a throat with capacity to punch to the center of an 18-in. circle. A knockout has been added and the major press parts have been standardized so they are interchangeable with regular 4-ton unit.

The bed mounts a 6 by 8 by 1-in. bolster. The crankshaft is eccentric design and is mounted in bronze bearings. The clutch dog is made of shock-resistant steel. Stroke is 1 inch.

▼ BREVITY—Identify by IEN - 3060 if you write the maker ◄▼

MOTOR . . Synchronous timing unit for speeds down to 1 revolution in 30 days

Source: HAYDON MFG. CO.
243-47 E. Elm St., Torrington, Conn.

Please note our errors

We made two errors in our description, IEN-750-51, on the company's synchronous timing motor by including an illustration, to the left, of a hermetically sealed design that is not made by this company and by including a paragraph concerning the availability of this unit, which actually is a product of A. W. Haydon Company of Waterbury, Conn. The series 4400 illustrated to the right in the description, is made as described by Haydon Mfg. Co. and is available for your use.

▼ BREVITY—Identify by IEN - 3061 if you write the maker ◄▼

MELTING . . Gas fired furnace, portable design handles lead or solder

Source: WELDIT INC.
988-92 Oakman Blvd., Detroit 6, Mich.

No. 500 designates a new melting furnace heated by liquid petroleum supply. It has capacity to melt 25 lb. of lead in a little under 5 minutes. The burner can be adjusted to maintain a desired temperature. Connection is made through a hose line to a liquid-petroleum tank that can be suitably located. No gas regulator is required for operation.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 3062 if you write the maker ◄▼

KLICKERBLOC
The Cutting Block of Many Superiorities

Comes in Pads and Laminated Blocks

(1) Pads 1-inch thick specifically designed to resurface old blocks on Clicking Machines, Dinkers and Beam Presses

(2) Laminated Cutting Blocks built to your specifications to give millions of sharp clean cuts per block

Classified Superiorities
1. Materials
2. Operation
3. Versatility
4. Cutting
5. Savings
6. Endurance

Superior in Materials because
- made of rubber and other fine materials of virgin quality only.
- carefully compounded to an exclusive use-tested formula.
- constantly controlled in quality throughout manufacture.

The proof is yours for the asking. Address:

TRY a KlickerBloc Pad for 30 days—FREE! Ask, giving dimensions.

KLICKERBLOC
LAKE ZURICH, ILLINOIS

▼ BREVITY—Identify by IEN - 3063 if you write the maker ◄▼

Users Tell Our Story Best!
163 ORDERS
FROM 3 CUSTOMERS ALONE...TOTALED
1,421,402 LBS.

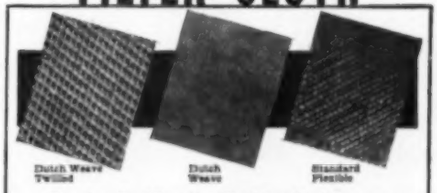
SPEED PATCH
WORLD'S FINEST, FASTEST, FLOOR FIXER!

TAKES ONLY ONE MINUTE PER SQUARE FOOT!
Think of it...just 3 customers purchased almost 1½ million lbs. of Speed Patch. And more orders are coming from them regularly. They have ordered loads of other Rock-Tred products as well. Must be good. Let their experience be your guide. Find out how Speed Patch can make your floors pay off in cash. Write today!

ROCK-TRED Corporation
Manufacturers of a Complete Line of Building Maintenance Materials
7440-7450 North St. Louis Avenue • Skokie, Illinois
In Canada: Rock-Tred Corporation (Canada) Limited, Toronto 8

▼ BREVITY—Identify by IEN - 3064 if you write the maker ◄▼

FILTER CLOTH



There's a Roebling Metallic Filter Cloth for your exact requirements

NO MATTER WHAT your filtering problems, you'll get maximum efficiency and top service economy with the *right* Roebling Metallic Filter Cloth. Roebling makes Filter Cloth from an exceptionally wide range of metals and alloys...in every practical weave and mesh. Those pictured above have the strength required for higher pressures or vacuum. They're smooth-woven and easy to clean; readily adaptable for nearly any type of filter.

Send for full information about Roebling Metallic Filter Cloth. And let us discuss you particular problems and furnish samples.

WOVEN WIRE FABRICS DIVISION
John A. Roebling's Sons Company, Roebling, New Jersey

ROEBLING

▼ BREVITY—Identify by IEN - 3065 if you write the maker ◄▼

The UNBRAKO FLAT HEAD SOCKET CAP SCREW

Maximum head contact, flush surface finish and non-slip internal wrenching make these screws ideal for assembly of thin-section materials. Available in National Coarse and National Fine Threads. Sizes from No. 4 to ¾".

SOCKET UNBRAKO SCREWS

SPS STANDARD PRESSED STEEL CO.
JENKINTOWN 14, PENNSYLVANIA

BREVITY—Identify by IEN - 3066 If you write the maker

AND MORE

WITH CHALLENGE LAYOUT SURFACE PLATES

Built of fine-grade special analysis semi-steel . . . these plates provide a smooth accurate surface for layout, inspection or assembly work. Six inches thick, 16 standard sizes —8" thickness and other sizes to order; also special plates with "Tee-Slots" or grooving, scoring, machining as specified. Arc-welded, all-steel stand is equipped with lack leveling screws. Plates can be grooved and keyed so that two or more may be assembled into one complete unit, e.g., four 54 x 144" plates into one 108 x 288" unit. Write for data and prices at once! 671

Challenge

THE CHALLENGE MACHINERY CO.
GRAND HAVEN, MICHIGAN
Send for Illustrated Catalog

BREVITY—Identify by IEN - 3067 If you write the maker

HELP YOURSELF to lower costs

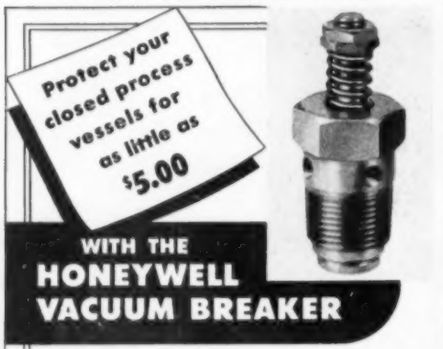
What makes these tools such favorites with production men? Just try them. They're producing more work and better work at lower cost in thousands of plants. They're powerful, dependable, easy-to-use. Sizes and types for practically any job. Write for full details — or better yet, ask for a free demonstration.

Millers Falls Co., Dept. P, Greenfield, Mass.

The Mark of Superiority

MILLERS FALLS TOOLS
SINCE 1868

BREVITY—Identify by IEN - 3068 If you write the maker



WITH THE HONEYWELL VACUUM BREAKER

The discharge of fluid from closed vessels sometimes becomes so rapid that the pressure differential between outside and inside causes collapse. The Honeywell Vacuum Breaker prevents such costly damage by keeping the vacuum within safe limits . . . cheap insurance considering cost of a half inch size is less than $5.00.

Sizes ½" to 3" . . . screwed connections . . . spring loaded construction. Made of bronze throughout. Vacuum adjustable from 2 to 24 inches of mercury. Relief Capacity from 3.7 cu. ft. of air per minute for ½ inch size, to 720 cu. ft. per minute for 3 inch size. Prompt shipment from stock. Send in your orders today.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 1911 Windrim Ave., Philadelphia 44, Pa. Offices in more than 80 principal cities of the United States, Canada and throughout the world.

Honeywell VALVE PRODUCTS

BREVITY—Identify by IEN - 3069 If you write the maker

PACKAGING . . Screw feed machine weighs dry material into valve bags

Source: E. D. CODDINGTON MFG. CO.
5096 N. 37th St., Milwaukee 9, Wis.

Auger-Matic trade names new bag-filling machine with rated capacity at 25 to 100 lb. for free-flowing material such as powders or pellets. The machine applies with standard valve-type bags which mount on its long-nose spout. It can be supplied to fill barrels and open-mouth bags by the use of an adapter.

Installation is beneath a tank hopper or feed line carrying the material. Drive is by a motor to the multiple-auger mechanism which is controlled by a built-in weighing scale that stops the action when a predetermined weight has been reached. Overall dimensions are 28½ by 42 by 45 inches. Operation is initiated by pressing a pushbutton after the operator has put a bag in position.

BREVITY—Identify by IEN - 3070 If you write the maker

CLEANING . . Abrasive blast machine employs liquid as abrasive carrier

Source: PANGBORN CORP.
230 Pangborn Blvd., Hagerstown, Md.

The blast chamber in this new Midget unit of the company's liquid-blast cleaning equipment measures 15 in. in diameter. Assembly is on adjustable legs made of ½-in. pipe to take up 17 by 22½ in. of floor space. The abrasive-liquid mixture is constantly bubbled by connection to a shop air line carrying 80-lb. pressure. Mixing action is maintained in a clear glass bowl holding ½ gal. at the base of the housing.

The abrasive and liquid are picked up by suction created in the air-operated nozzle for blast or jet application on work in the housing. The work is introduced through a top plate containing an observation window. List price is $197.

BREVITY—Identify by IEN - 3071 If you write the maker

TIMBER . . Our national status concerning timber is summarized in booklet

American Forest Products Industries Inc.
1317-21 18th St. N. W., Washington 6, D. C.

Nine points on what is being done to replenish our timber resources are described in new 24-page booklet, "The Nation's Wood Supply". Data in picture form show how much wood there is, who owns it, how much is removed, current trend.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3072 If you write the maker

MARSH INSTRUMENT CO.
Sales affiliate of Jas. P. Marsh Corp., **DEPT. A, SKOKIE, ILL.**
Export Dept., 155 East 44th Street, New York, New York

BREVITY—Identify by IEN - 3073 If you write the maker

"AIR KING"

QUICK-ACTING, UNIVERSAL TYPE
HOSE COUPLING

A strong, durable coupling for quick, tight connections on field or factory air hose. Plain design—no parts to get out of order or clogged with dirt. Made in hose ends and male and female threaded pipe ends. Completely interchangeable. Patented safety locking device is proof against vibration and rough handling. Malleable iron (rustproofed) or bronze.

From Your Hose Supplier or Industrial Distributor

DIXON VALVE & COUPLING CO.
PRODUCERS OF *The Quality Line* COUPLINGS • NIPPLES • MENDERS • CLAMPS
"BOSS" "G-BOSS" "DIXON" "KING" "AIR KING" "DIX-LOCK"
PHILADELPHIA, PA. BRANCHES: CHICAGO • BIRMINGHAM • LOS ANGELES • HOUSTON

BREVITY—Identify by IEN - 3074 If you write the maker

"The eye of the master will do more work than both his hands."

—Ben Franklin's Almanac, 1757

Touring thy plant with a critical eye can do more for the health of thy business than a trip to Washington.

—Acme Steel Notebook, 1951

Your management eye needs to be a dozen places at once these days—on supplies, on production, on deliveries and all over your plant to keep efficiency high and morale up.

Your Acme Steel representative is ready to help bring you greater thrift in the use of Acme Steel's flat steel strapping and stitching wire in your packaging, shipping, and materials handling operations. He may be able to suggest more efficient ways to use Acme Steel products and accessories to improve your use of the available supply.

In spite of an increase in productive capacity, U. S. military requirements for some products make it impossible for Acme Steel to meet all the demands of the 50,000 customers, representing nearly every American industry, in these rearming times. But Acme Steel tries to help in every way we can—we always have for more than 70 years.

Information for ready reference on Acme Steel products is available upon request.

ACME STEEL COMPANY
Dept. IEN-31, 2838 Archer Avenue, Chicago 8, Illinois
To contact the nearest of our 46 Service Offices in the United States and Canada, check your telephone directory, or write us.

ACME STEEL

Acme Steel Company has enjoyed sound, steady growth under the American business system of open competition. Since 1901 we have made 286 consecutive dividend payments to our stockholders.

ACME STEELSTRAP flat steel strapping and ACME UNIT-LOAD carload bracing BAND, SEALS and TOOLS • ACME SILVERSTITCHERS and ACME SILVERSTITCH WIRE for box stitching • ACME-MORRISON METAL STITCHERS and BOOK STITCHERS • ACME-CHAMPION BAG STITCHERS • ACME HOT AND COLD ROLLED STRIP STEEL • ACME GALVA-BOND steel slat stock for Venetian blinds • ACME STEEL SPECIALTIES, including hoops, corrugated fasteners, nail-on strapping and other container reinforcements • ACME STEEL ACCESSORIES—snips, cutters, punches, tool mounts, reel stands, coil holders, coil trays.

BREVITY—Identify by IEN - 3076 if you write the maker

FAST — EASY
PERMANENT
WIPE-ONS
for
STAMPINGS, ENGRAVINGS, LETTERING, DESIGNS, SYMBOLS.

Lacquer-Stik

Just RUB IN . . . WIPE OFF . . . FINISHED!

- No Mess, No Waste, No Brush.
- Expands and contracts with parts.
- Withstands temperatures to 500° F.
- Does not smear when handled.
- Saves Time, Labor, Materials.

For Metals, Plastics, Ceramics, Wood and all smooth surfaces.

Lacquer-Stik is a highly specialized paint, compound and prepared solely for use as a wipe-on. It is semi-solidified in stik form for quick, convenient use, but soon hardens and becomes permanent.

Our Research Laboratories will study your problem and make recommendations on any parts you submit without obligation.

Samples and Literature Upon Request

LAKE CHEMICAL CO., 3060 West Carroll Ave., Chicago 12, Ill.

BREVITY—Identify by IEN - 3077 if you write the maker

step up production with

STOW flexible shaft MACHINES

These dependable STOW FLEXIBLE SHAFT MACHINES save production time . . . speed up output . . . help lower production costs. Variable Speed Models shown are easily portable . . . cut down operator fatigue and increase on the job efficiency!

Constant Speed Models available. Also complete line of accessories designed to increase the utility of STOW Flexible Shaft Machines!

WRITE TODAY
for your free copy of CATALOG 50

STOW MANUFACTURING CO.
25 Shear St. Binghamton, N. Y.

BREVITY—Identify by IEN - 3078 if you write the maker

Safe . . . because it's non-slip

TRED-FAST

Penetone's new floor wax that gives sheen of glass . . . grip of emery!

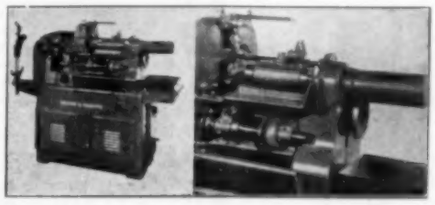
Listed as an "anti-slip material" by Underwriters Laboratories, Inc., TRED-FAST keeps floors safe underfoot . . . yet gives them the beauty of a highly waxed finish. Newly developed by Penetone, TRED-FAST contains a special chemical derivative that assures you all the shining qualities of a water-emulsion wax, plus a grip of emery. Actually safer than no waxing at all! Easy to apply, quick-drying, hard and durable, TRED-FAST is ideal for asphalt tile, rubber tile and all other surfaces. Send for full facts and samples of revolutionary new TRED-FAST.

THE PENETONE CO.
BOX IEN-351 • TENAFLY, N. J.

BREVITY—Identify by IEN - 3079 if you write the maker

LATHE . . Automatic machine for clean and fast bar stock cut-off

Source: BROWN & SHARPE MFG. CO.
235 Promenade St., Providence 1, R. I.



Opposed spindles, power driven in the same direction and at the same speed, grip bar stock fed from the left in this new machine. They support and drive it to permit cutting off pieces of desired length without leaving any teat to require a second operation. The machine has been developed particularly for manufacture of bearing rollers in diameters to ⅜ in. and length to 4½ inch. This capacity can be increased when specified to ½ in. and the feed tube can be lined for bar stock as small as 3/32 in. in diameter. There are 16 speeds between 454 and 5,000 rpm. Gears are supplied to provide cycle rate between ¾ and 45½ seconds. The machine is equipped with one of the company's gear pumps to operate, whenever the machine's driving motor is running, for coolant supply to the cutting operation.

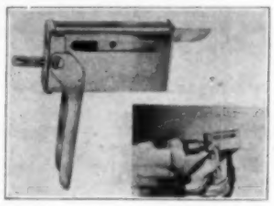
Bar stock is fed from the left by a mechanism that can be set to feed any length to 1 in. in a single movement, requiring ¼ sec., or in successive movements to feed the maximum of 4½ inches. A swing stop is operated in step with the collet and feed mechanism to determine the exact feed length. It retracts for advance of the live tailstock spindle which also is fitted with a collet. This collet grips the work so both ends are equally supported while cross-slide tools are advanced from the front and rear to make the cut.

Finished pieces feed to the right through the tailstock spindle to drop into a receiving pan on a shelf at the right-hand side. The machine occupies floor space measuring 80½ by 41 inches. It is driven by a 2-hp. constant-speed motor. The company has prepared preliminary information.

BREVITY—Identify by IEN - 3080 if you write the maker

SAWING . . Hack saw attachment for application in ¼ in. drill chuck

Source: BERTRAM ENGINEERING & SUPPLY CO.
3119-23 Main St., Kansas City 2, Mo.



Rotating drive by a ¼-in. drill chuck in a portable tool or on a drilling machine reciprocates the saw blade in this new attachment at a 2-to-1 ratio. Stroke is ¾ inch. The attachment weighs 11 ounces. It measures 4 by 1 by 1½ inches. It is held by a pivoted handle that rotates to line up with the blade and protect it when the saw action is not required. List price of the new attachment is about $5.

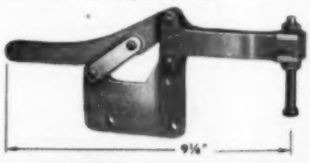
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3081 if you write the maker

Where jobs require ANGLE CLAMPING

This side mount clamp is ideal to use where the toggle bar must be positioned at an angle. The clamp can be easily rotated to meet such requirements much better than one with too base, which necessitates blocks or shims to achieve the desired angular mount. Three sizes are available.

SEND FOR NEW BULLETIN



Other clamps we make include: vertical and horizontal types with various mounts, cam-action and air-operated clamps, "C" clamps, pliers, and wrenches. Ask for new, complete catalog.

Model HS-200 4⅝" long, recommended pressure 200 lbs.
Model HS-400 6½" long, recommended pressure 400 lbs.
Model HS-600 9⅛" long, recommended pressure 600 lbs.

KNU-VISE PRODUCTS LAPEER MFG. CO.
3060 DAVISON ROAD • LAPEER, MICHIGAN
Western Division, 422 Magnolia St., Glendale, Calif.

BREVITY—Identify by IEN - 3082 if you write the maker

GE HEAVY-DUTY SWITCHES

(for 20 and 30 amp)

. . . built to take it!

Tough construction and smooth action are the double features that make G-E heavy-duty switches important wiring news!

These tough, T-rated switches are protected by an over-all plastic housing. Housing is extra shallow for extra wiring space in boxes. Pressure connectors, designed for convenient back wiring, make installation quick and easy.

General Electric heavy-duty switches are available in single-pole, 3-way, double-pole, and single-pole quadruple break types. For complete information write Section D52-342, Construction Materials Department, General Electric Company, Bridgeport 2, Connecticut.

GENERAL ELECTRIC

BREVITY—Identify by IEN - 3083 if you write the maker

Here's the Man That Can Help You CUT COSTS with GENERAL PLATE
Precious and Composite Metals and Assemblies

The best opportunity for cutting costs, increasing production and at the same time obtaining maximum performance is to investigate other metals or metal combinations. That's why we say, "A General Plate Field Engineer can help you cut costs."

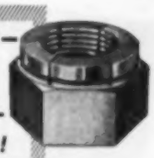
He will show you how base to precious combinations save dollars by eliminating a large waste of precious metal . . . how base to base metals provide physical properties not found in single metals. And best of all, he can help you apply them to your products. He will also show you proof where General Plate Composite metals and products have provided an economical solution to the problem. Write for his services, today.

GENERAL PLATE DIVISION
of Metals and Controls Corporation
703 Forest Street, Attleboro, Mass.

BREVITY—Identify by IEN - 3084 if you write the maker

A fastener AIN'T, if — it works loose.

The "FLEXLOC" IS — because it won't!



FLEXLOC
ONE-PIECE, ALL-METAL
STOP- and LOCK-NUT

Its "chuck-like," resilient locking segments lock the "FLEXLOC" securely in any position on a threaded member with a controlled, uniform and dependable torque.

Tough applications demonstrate that the "FLEXLOC" positively "won't work loose", yet it can be removed easily with a wrench when desired. Because it is all-metal, temperatures as high as 550°F. hold no terrors for the "FLEXLOC."

The "FLEXLOC" has plenty of tensile . . . can be re-used many times . . . has therefore a long, effective life.

Write for further information and free samples.

SPS STANDARD PRESSED STEEL CO.
JENKINTOWN 14, PENNSYLVANIA

BREVITY—Identify by IEN - 3085 if you write the maker

Remember Ingersoll produces all 3

STEELS THAT RESIST CORROSION

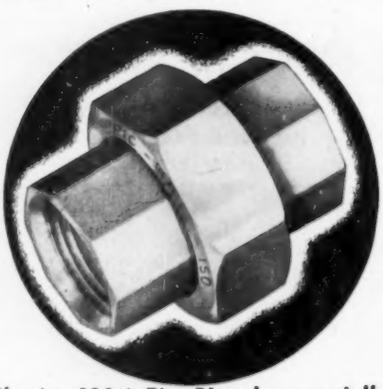
STEELS THAT RESIST HEAT

STEELS FOR LOWEST COST STAINLESS PROTECTION

B-W ENGINEERING PRODUCTION

Ingersoll STEEL DIVISION
BORG-WARNER CORPORATION
310 South Michigan Avenue, Chicago 4, Illinois
Plant: New Castle, Indiana

BREVITY—Identify by IEN - 3086 if you write the maker



They're 100% Zinc Plated — specially designed for Original Equipment!

PIC STEEL UNIONS

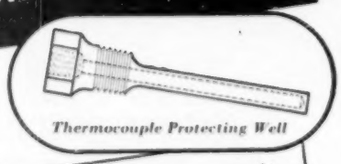
Unusually attractive—strong—this 150# steel union is specially suited to the needs of manufacturers of original equipment. Ends are made of heavy steel pipe coupling stock—uniformly flat sided for fast installation with open-end or pipe wrenches: A special wedge-type bronze seat ensures tightness. Zinc plating — even on threads—gives 100% rust protection. The cost?—less than a galvanized, no more than a black malleable union.

Write for FREE SAMPLES.

DART UNION COMPANY, Providence 5, R. I.

BREVITY—Identify by IEN - 3087 if you write the maker

The Walls of this Well are Uniform!



Thermocouple Protecting Well

THE Brown *Precision-Made* Thermocouple Protecting Well has a uniform wall thickness of engineered accuracy . . . is available in a complete line . . . can be supplied in practically all common metals and alloys, of almost any wall thickness, to withstand high temperatures and pressures. And, quick delivery can be made from stocks maintained at Philadelphia, Cleveland, Chicago, Atlanta, Houston, Los Angeles and San Francisco. Call in your local Honeywell Supplies Man for full particulars. MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4456 Wayne Ave., Philadelphia 44, Pa.

Honeywell BROWN INSTRUMENTS

BREVITY—Identify by IEN - 3088 if you write the maker

TIMING . . Pneumatic valves for air control of machine cycling

Source: MEAD SPECIALTIES CO.
4112-16 N. Knox Ave., Dept. T-38, Chicago 41, Ill.

Model 4, at the bottom of the illustration, and Model 5 at the top, are two new air timing valves for installation in control lines to one or more machines. Model 4 will operate both double-acting and single-acting cylinders. It can be set up for a continuous cycle to be initiated by pushbutton.

Model 5 assembles on one or more machines for pushbutton start and automatic stop when one or all of the machines in the connected circuit have reached the end of a predetermined range of movement. The company has prepared a new catalog including these timer valves with typical connections, hookup diagrams and specifications.

Assembly for Model 4 is on a base measuring 10¼ by 4¼ inches. Overall height is 2¾ inches. Model 5 measures about 6¼ by 3½ by 3 inches overall. List prices are $39.50 and $22.50 respectively for the two models.

BREVITY—Identify by IEN - 3089 if you write the maker

CLEANING . . Liquid material for use on laboratory glassware, utensils

Source: EMIL GREINER CO.
18-28 N. Moore St., New York 13, N. Y.

Aquet is a new liquid surface cleaning material that is sprayed from its flexible plastic container. It cuts grease, leaves a slight film of water. Glassware so treated is allowed to dry, will be clean in about two minutes without any wiping.

When the bottle has been emptied, it can be used as a dispenser for other chemical reagents in a laboratory. Space is provided on the label to indicate the new content. The bottle is provided with a pressure equalizing orifice tube that prevents liquid from being forced out on rising temperature or drop in atmospheric pressure.

BREVITY—Identify by IEN - 3090 if you write the maker

PROCESSING . . Instruction course in food technology this summer at M.I.T.

Massachusetts Institute of Technology
77 Massachusetts Ave., Cambridge 39, Mass.

Three weeks, from June 25 to July 13, will be devoted to a special course in food technology to be given as part of the Institute's Summer Session. Subjects will include materials, processing, packaging, management. Tuition will be $100. Enrollment will be limited to qualified individuals.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 3091 if you write the maker

ROTO FINISH

GIVES YOU 5 OUTSTANDING ADVANTAGES for Deburring, Descaling and Finishing Operations

1. Eliminates tedious hand filing, scraping, polishing, deburring, etc. to save many man hours.
2. Provides absolute uniformity in quantity lots.
3. Maintains exacting tolerances on precision parts where no dimensional change is allowable.
4. Imparts a finish mechanically that was formerly considered possible only by hand methods.
5. Low initial cost — requires minimum maintenance. No exhaust systems required.

Send samples for free demonstration

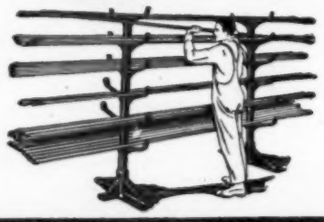
Roto-Finish COMPANY
associated with The Sturgis Products Co.
3701 MILHAM RD., KALAMAZOO, MICHIGAN
ORIGINATORS OF THE ROTO-FINISH PROCESSES

BREVITY—Identify by IEN - 3092 if you write the maker

SPEEDS UP STOCK-ROOM SERVICE

The BROWN TIME-SAVING RACK saves the time previously lost end-hauling each bar of stock its entire length from the old-style, closed-side Rack, the Brown Rack requiring but a few inches of side movement. Each length, width and thickness of stock is displayed in goldfish visibility for instant selection. Workmen waiting for stock are served without waste of time, and returned to their production machines to turn out a maximum of output. Any time you require additional storage space, all you need do is to add more units. If you want to relocate it at any time, you can do so for it is unattached to the building. It is a simple, durable article made of metal in five styles. It can't burn, warp, sag or twist; depreciation is practically nil. SEND FOR BULLETIN No. 26-E DESCRIBING

BROWN'S *QUICK-SERVE* RACKS



BROWN ENGINEERING CO.
122 NORTH THIRD STREET READING, PENNA.

BREVITY—Identify by IEN - 3093 if you write the maker

Mathews Chain Conveyers

"ENGINEERED TO SERVE PRODUCTION"

● One of the many widely applied types of conveying equipment designed and built by Mathews Conveyer Company.

The complete line of Mathews designed—Mathews built Conveyers includes the following:

ROLLER CONVEYERS • LIVE ROLLER CONVEYERS • BELT CONVEYERS
WHEEL CONVEYERS • ELEVATING CONVEYERS • TROLLEY CONVEYERS
ROLLER SPIRAL CONVEYERS • PORTABLE CONVEYERS
SPECIAL CONVEYING MACHINERY

MC

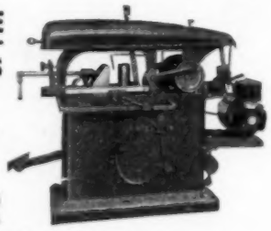
MATHEWS CONVEYERS

GENERAL OFFICES
Mathews Conveyer Company . . Ellwood City, Pennsylvania
PACIFIC COAST DIVISION
Mathews Conveyer Company West Coast . San Carlos, Calif.
CANADIAN DIVISION
Mathews Conveyer Company, Ltd. . . . Port Hope, Ontario

Engineering Offices or Sales Agencies in Principal American and Canadian Cities

BREVITY—Identify by IEN - 3094 if you write the maker

Handle MORE CUTTING JOBS at LOWER COST with . . .



KELLER POWER HACK SAWS

Cuts everything from heavy bars to thin wall tubing fast with KELLER Saws. Simple to operate . . . designed for long blade life . . . sturdy construction assures long operation with maximum maintenance. A low priced model for every requirement.

No. 3 Hy-Duty Model has patented adjustable blade pressure control.

PLEASE RUSH THE KELLER POWER HACK SAW BULLETIN BY RETURN MAIL

NAME _____
COMPANY _____
CITY _____ ZONE _____
STATE _____

Sales Service Machine Tool Co.
2365 UNIVERSITY AVENUE
ST. PAUL 14, MINNESOTA

BREVITY—Identify by IEN - 3095 if you write the maker

The
GUARDIAN SERIES 335 D.C. RELAY

Approved—distinguished by spectacular performance in truck train communications and thousands of flying echelons—The Guardian Series 335 D.C. Relay! Hermetically sealed or with conventional open and special mountings, unit offers a wide variety of applications. Series 335 D.C., built to rigorous aviation standards, meets the 10-G Vibration Test and the Mil-R-6106. Generous coil winding area permits single windings up to 15,000 ohms. Parallel and double windings available. Write.

GUARDIAN ELECTRIC
1628-C W. WALNUT STREET CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

BREVITY—Identify by IEN - 3096 if you write the maker

STOP TAKE-UPS and DOWN-TIME with...

LEATHER for Greater Pulley Grip and Durability!
RAYON CORDS eliminate stretch and maintenance.
CORDAN LEATHER BELTS deliver More Power, More Production Longer!
CORDAN LEATHER BELTS hold tension, reduce slippage, practically eliminate take-ups and down-time.

Write TODAY for descriptive, illustrated literature.

ESTABLISHED 1881 **S. R. SIKES COMPANY** MINNEAPOLIS 15, MINNESOTA

BREVITY—Identify by IEN - 3097 if you write the maker

PROTECT
your expensive dies and machine parts

USE
ACME
RED OR BLUE LABEL
PRECISION
DOWEL PINS

Acme Dowel Pins break before bending or mushrooming—thus saving expensive equipment from ruin through misalignment. Order standard sizes from stock. Attractive prices on special sizes and large quantities.

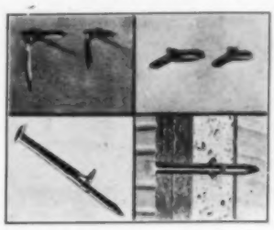
WRITE FOR DESCRIPTIVE CIRCULAR

Acme Industrial Company
Makers of Standardized Jig & Fixture Bushings
215 N. Leffin Street • Chicago 7, Illinois
THE SERVICE SHOP TO INDUSTRY FOR MORE THAN 25 YEARS

BREVITY—Identify by IEN - 3098 if you write the maker

FASTENING . . Cotter type nail clinches points when head is flat

Source: ELASTIC STOP NUT CORP.
2328-32 Vauxhall Road, Union, N. J.

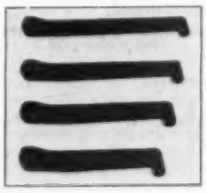


New design of ES-nail, previously described IEN-S817-50, is intended primarily for face-nailing asbestos shingles directly to non-wood sheathing. The new nail, made of stainless steel, is available in quantities at present for ½-in. sheathing. The head has been relieved to require less force than previously needed to completely flatten it against the face of a shingle. The point has been changed in design for clean penetration without spoiling or tearing away any of the sheathing material.

BREVITY—Identify by IEN - 3099 if you write the maker

PRESS TOOLS . . Trigger work stop for assembly in progressive press tools

Source: REID TOOL SUPPLY CO.
707-11 Baker St., Muskegon Heights, Mich.

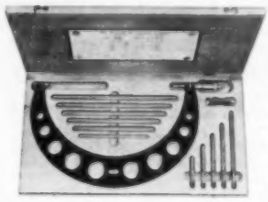


Four sizes have been standardized at 3½ to 5 in. in length in this new line of steel trigger stops. The body is $\frac{7}{16}$ in. square. The stop end has a $\frac{5}{32}$-in. radius and is ⅝ in. in height. The finger end is forged flat. The stops are supplied in soft condition so they can be drilled for installation in a press tool. Each is finished in black corrosion-proofing Penetrate.

BREVITY—Identify by IEN - 3100 if you write the maker

GAGE . . Micrometer, has interchangeable anvils, 6 to 12 in.

Source: L. S. STARRETT CO.
100 Starrett St., Athol, Mass.



No. 224 designates new micrometer in combination with six interchangeable anvils and six standards by which the given anvils are set for active use. The frame is a steel forging finished in black enamel. Sleeve and thimble are finished with rust-resistant, no-glare satin chrome. Markings stand out sharply to read under any illumination. Spindle threads are hardened, stabilized and ground. A locknut maintains a given setting.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3101 if you write the maker

pumping troubles?

—OTHERS ARE ENDING THEM BY USING

YEOMANS PUMPS

All these "problem products" are being handled with top efficiency and at low cost by Yeomans Pumps.

CHEMICAL PROCESSING
brine
heavy chemicals
melted phosphorus
zinc compound

FOOD PROCESSING
unstrained cane juice
sugar, bagasse
lima beans
mayonnaise
packing house wastes
cannery wastes

MISCELLANEOUS
foundry sand
pulp, paper products
plastics
grease
sludge
machine tool sludge with cuttings
ash pit water

Talk to Yeomans about a centrifugal pump or pneumatic ejector designed to meet your needs, and to give long, dependable, low-cost service. Write for Manual 2300 showing recommended pumps for wide variety of applications.

YEOMANS BROTHERS COMPANY
1467 NORTH DAYTON STREET, CHICAGO 22, ILLINOIS

BREVITY—Identify by IEN - 3102 if you write the maker

Traffic lanes take a beating. Renew and protect them with Plastic Rock. It packs hard, improving under heavy traffic. Ten-year old floors show no wear. Plastic Rock reduces noise, is fire-resistant, skid-safe, wet or dry; bonds perfectly to concrete, wood or steel. All ingredients packed complete in a handy barrel. Your own crew or contractor can easily apply. Plastic Rock puts shock-absorbers on your floor.

in 48 HOURS!

Ask for Report 220-Q-3.

UNITED LABORATORIES, INC., 16603 Euclid Ave., Cleveland 12, Ohio

PRODUCTS AND PROCESSES for PROTECTING PROPERTY
Field Representatives All Over The World

BREVITY—Identify by IEN - 3103 if you write the maker

Twin halfs of resin bonded "C" process thin shell sand mold.

HELPING PUT THE BRAKES ON METAL WASTE!

A single pound of metal *not wasted* on a casting can mean tons of metal conserved per month. That's why so many foundries are thoroughly evaluating the Croning process.

This process yields sand molds and cores—for both ferrous and non-ferrous metals—that are thin shells requiring only ten per cent of the sand normally used. Their finish is extremely smooth and accurate. They are made in a matter of minutes, a vital consideration today!

They conserve metal because products are cast in them to extremely close dimensions with well-nigh pattern-smooth surfaces—greatly reducing the machining to be done. They conserve metal by cutting down on rejects—shrinking the scrap piles.

They are strong and moisture resistant. Because these dimensionally stable molds and cores can be stored for long periods, they promote efficiency by letting founders build up mold inventories to match anticipated quotas of metal and demands for production.

Bakelite's laboratories have developed BAKELITE Phenolic Bonding Resins of the precise formulations required for the heat-setting of these molds and cores into homogeneous form. They have also formulated a special wetting agent that minimizes segregation in the resin-sand mixture. Available as well is a superior parting agent that facilitates release of the molds and cores from the hot patterns.

Why not find out now how this time-saving process can cut down on machining, finishing, and wasteful rejects, thereby conserving metals. We'll gladly help you in any way we can. Address Dept. BQ-14.

BAKELITE
TRADE MARK
PHENOLIC BONDING RESINS

BAKELITE COMPANY
A Division of Union Carbide and Carbon Corporation
30 East 42nd Street, New York 17, N.Y.

BREVITY—Identify by IEN - 3105 If you write the maker

Rolling Steel Doors

Manually • Mechanically • Power Operated

No other type of door offers as many desirable features as a good Rolling Steel Door . . . open or closed, they occupy no usable space inside or outside the opening. All-metal construction assures permanence and a lifetime of continuous trouble-free service. Push-button controlled vertical roll-up action provides the quick, timesaving door operation demanded today by all industrial and commercial concerns. When you buy Mahon Rolling Steel Doors you get the latest developments in doors of this type — comparison will convince you. See Sweet's File for complete information, or write for Catalog No. G-50.

THE R. C. MAHON COMPANY
Detroit 34, Michigan • Representatives in All Principal Cities

BREVITY—Identify by IEN - 3106 If you write the maker

Here's BIG NEWS on Blast Cleaning Dust Control Precision Finishing

Blast Cleaning Unit is PORTABLE! | Hydro-Finish SPEEDS POLISHING!

Ideal for maintenance and many other jobs, including removal of rust, dirt, scale, etc. Economically cleans large objects like tanks, bridges, structural work before painting. Six sizes, stationary or portable, from $170.00 and up.

Removes scale and directional grinding lines . . . prepares surfaces for plating and holds tolerances to .0001"! Liquid blast reduces costly hand cleaning and finishing of molds, dies, tools, etc. Models from $1295.00 and up.

STOP DUST at the SOURCE! | COMPACT Blast Cabinet for SMALL WORK!

Pangborn industrial type Unit Dust Collectors trap dust at source. Machine wear is minimized, housekeeping and maintenance costs reduced. Solves many grinding and polishing nuisances and material losses. Models from $286.00 up.

Ideal for producing clean, smooth surfaces on pieces up to 60" x 36" in size. Cleans metal parts, removes rust, scale, grime, dirt, paint, etc., in a few seconds. Saves money all year 'round. Models from $315.00 and up.

Look to Pangborn for the latest developments in Blast Cleaning and Dust Control Equipment

Pangborn MAIL COUPON FOR DETAILS

Check for more information
- ☐ Blast Cleaning Cabinets
- ☐ Blast Cleaning Machines
- ☐ Dust Dust Collectors
- ☐ Hydro-Finish Cabinets

PANGBORN CORP., 2300 Pangborn Blvd., Hagerstown, Md.
Gentlemen: Please send me more information on the equipment I've checked at the left.
Name.....
Company.....
Address.....
City.....Zone....State.....

BREVITY—Identify by IEN - 3108 If you write the maker

TRUCK . . Power lift fork design, rates 40 ton, diesel electric drive

Source: YALE & TOWNE MFG. CO.
11002 Roosevelt Blvd., Philadelphia 15, Pa.

Pivoted forks on the front of this new truck can be moved together to form a single ram on which to carry one coil of steel. They can be swung apart to handle two coils side by side. The truck is driven by a 165-hp. Cummins diesel engine direct connected to a 90-kw. G-E locomotive-type generator.

Truck weight is 42 ton. Overall dimensions are 124 in. in width by 178 in. in height. Turning radius is 168 in. for navigation in 14-ft. aisles. Lift height is 91 inches. Articulated construction permits safe steady operation over uneven floor surfaces. Hydraulic pressure is employed for steering as well as for load handling in the new truck.

BREVITY—Identify by IEN - 3109 If you write the maker

DRYING . . Infrared equipment, assemblies to meet specified requirements

Source: WIL-SON MFG. CORP.
702 Huston St., Cloverport, Ky.

Section elements measuring 8 in. in width by 24, 32 and 48 in. in length join side by side and end to end to make up a new drying-oven assembly that can be shaped to meet given requirements and that can be taken down and rearranged as these requirements change. Each section locks to the next section so a six-section oven can be adjusted from a flat bank to a closed circle. Structural supporting members are available as required.

BREVITY—Identify by IEN - 3110 If you write the maker

MANAGEMENT . . Short instruction courses to train men in everyday industrial economics

American Economic Foundation
295 Madison Ave., New York 17, N. Y.

Schedule for the Foundation's Executive Seminars through November 1951 now is available upon request as a 4-page folder. Forty-seven of these instruction sessions will be held in 19 cities to prepare your plant management men for leading employee discussions of economics and training others.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3111 If you write the maker

hose and duct clamps to fit special needs

Ordinary run of the mill hose clamps don't fill the bill for many applications with specialized or exacting requirements. Marman Clamps are engineered to fit particular needs.

For all around use . . . varying sizes and shapes . . . Marman Universal Clamps are the answer. Continuous band design for easy installation and wide size adjustment . . . stainless steel for strength and corrosion resistance . . . self locking swivel nut for resistance to vibration . . . can be used again and again.

For extra strength . . . Marman T-Bolt Clamps' exclusive features provide even circumferential take up, assure an efficient seal.

For fast assembly and disassembly . . . Marman Quick Coupler Clamp patented snap on latch makes it go on or off in an instant. Particularly suitable for removable equipment, accessories and ducts.

Our catalog tells more . . . just write Dept. I-3

MARMAN PRODUCTS CO. INC. 940 WEST FLORENCE AVENUE INGLEWOOD, CALIFORNIA

BREVITY—Identify by IEN - 3112 If you write the maker

BURT Free Exhaust Fan VENTILATOR

NEW HIGH CAPACITY HIGH VELOCITY VENTILATOR

The new Burt F.E.F. Ventilator has been designed for highly efficient service in the rapid removal of smoke, fumes, dust and heat. In operation, its absolute free opening provides higher capacity than any other type. Powered by the time-tested Burt Axial Flow Airfoil Fan and individually test-run. Easily installed and maintained, the new Burt F.E.F. merits your immediate investigation. See Sweet's or write for Bulletin S.P.V. 15A.

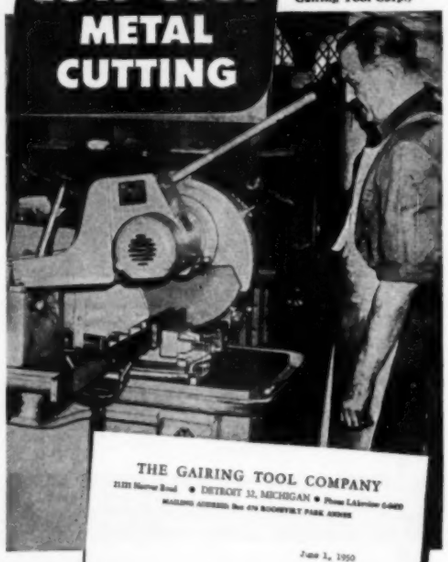
FAN & GRAVITY VENTILATORS • LOUVERS • SHEET METAL SPECIALTIES

The Burt Manufacturing Company
909 So. High St., Akron, 11, Ohio

BREVITY—Identify by IEN - 3113 If you write the maker

LOW-COST METAL CUTTING

(Photo Courtesy Gairing Tool Corp.)



THE GAIRING TOOL COMPANY
21231 Hoover Road • DETROIT 32, MICHIGAN • Phone Lakeview 5-6400
MAILING ADDRESS: Box 476 ROOSEVELT PARK ANNEX

June 1, 1950

J. Lee Hackett Company
1962 E. Kimmedee
Detroit 11, Michigan

Attention: Mr. J. Lee Hackett

Gentlemen:

About six months ago we purchased a Stone Swing cut-off machine from you to cut bar stock. We have continuously used this machine since it was purchased and thought you would be interested in knowing that it does about five times as much work as our previous equipment.

Yours very truly,
THE GAIRING TOOL COMPANY
John Miller
John Miller

LMM/jm

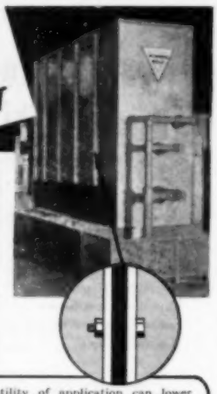
This progressive manufacturer replaced one hack saw and one band saw with a Stone Swing-Cut. Result — production increased *five times*. You can lower your metal-cutting costs — in ferrous and non-ferrous materials — with a Stone Swing-Cut.

Write today for further information.

STONE MACHINERY CO., INC.
310 FAYETTE STREET MANLIUS, N. Y.

▼ BREVITY—Identify by IEN - 3115 if you write the maker ▼

DURKEE-ATWOOD
DOR-TITE KEEPS IT WATER-TIGHT



Says Despatch Oven Company Engineer

A leading producer of spray-paint booths, Despatch Oven Co., Minneapolis, uses Dor-Tite for water-tight gasketing between metal panels. Soft and resilient sponge rubber, Dor-Tite prevents seepage from the booth's water curtain . . . seals out dust and air. Dor-Tite cuts production costs because it comes in exact widths and thicknesses needed, requires no trimming, applies swiftly with its own factory-applied adhesive back.

Dor-Tite's amazing versatility of application can lower production costs for you, too. It weatherstrips, insulates, stops vibration, cushions shocks, muffles noise, bars dust, air and moisture. Self-adhesive, Dor-Tite presses quickly and easily into place, bonds tightly to any firm surface without glue or nails. Patented fabric backing positively prevents stretching. Available in widths and thicknesses to suit any product . . . any industry. Call your hardware and mill supply house and insist on *genuine* Durkee-Atwood Dor-Tite or write direct for details.

Another D-A product: Bulk Sponge Rubber for industrial uses; to 36 inches wide; thickness ⅛ to 1 inch; in specified lengths.

DURKEE-ATWOOD COMPANY
Dept. S-8, Minneapolis 13, Minn.

▼ BREVITY—Identify by IEN - 3116 if you write the maker ▼

MODERN PROBLEMS
get modern answers with DUREZ

Short cut between production runs

Multihead drills were this custom molder's solution when radio and clock cabinet hole locations shifted from model to model. To get high production rate on Durez phenolic plastic cabinets, the molder uses semi-automatic compression presses and electronic preheating equipment. Durez was selected for its excellent electrical properties and heat resistance, comes from mold with handsome mottle finish.

STORED ENGINES STAY FREE FROM RUST

Dehydrator plugs for aircraft engines required close tolerances and torque strength to exclude moisture, plus resistance to heat used in renewing activity of silica gel. An expensive special-purpose Durez phenolic seemed necessary. Instead, the custom molder suggested a minor design change, making it feasible to use a general-purpose Durez at substantial cost saving.

KNOWN AS THE MOST VERSATILE of all plastic materials, the phenolics lend themselves to an extraordinarily wide range of design and production ideas. Durez has specialized from the beginning in the phenolics, and now has available more than three hundred different molding compounds, as well as a wide variety of phenolic resins. Let our field technicians help you. And to keep informed on industry's use of phenolics, write for our monthly "Durez Plastics News." Durez Plastics & Chemicals, Inc., 1703 Walck Road, North Tonawanda, N. Y.

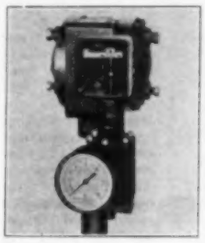
DUREZ
Phenolic Plastics that fit the job

PHENOLIC RESINS — MOLDING COMPOUNDS / INDUSTRIAL RESINS / PROTECTIVE COATING RESINS

▼ BREVITY—Identify by IEN - 3118 if you write the maker ▼

METER . . Differential transmitter to read liquid flow in a pipe line

Source: MOORE PRODUCTS CO.
Lycoming & H Sts., Philadelphia 24, Pa.



Differential pressure is applied to a pair of opposed mechanically-linked liquid-filled metallic bellows in this new transmitter. The bellows produce a force on a pneumatic transmitter, a pilot-operated unit which includes a pneumatic follow-up. Frictional errors are eliminated and the instrument will transmit changes in differential pressure as small as .02 per cent of full range. The design of the bellows and use of the liquid fill permits application of the instrument at pressures to 3,000 pounds. Measurements are transmitted on a standard 3 to 15-lb. pressure range.

Bulletin 11-1, 6 pages, presents illustrations, sectional view schematic diagrams and technical data.

▼ BREVITY—Identify by IEN - 3119 if you write the maker ▼

WATER PROOFING . . Mastic material fills holes and repairs soles of shoes

Source: DAPS COMPANY
69-73 Grove St., Paterson 3, N. J.

Four ounce can costs 60 cents

Mastic Leather is the name of a new material developed by the company to spread by brush or knife on clean dry soles of new shoes and to fill breaks and holes in old ones after they have been cleaned. The material dries overnight to a tough flexible coating that is wear resistant, non-skid and will keep out dampness. A 4-oz. can will make about twenty applications to surface or repair shoe soles.

▼ BREVITY—Identify by IEN - 3120 if you write the maker ▼

TESTING . . Electric indicator reads combustible gas in atmosphere

Source: DAVIS EMERGENCY EQUIPMENT CO.
58 Halleck St., Newark 4, N. J.

Model M-1, Type-L is a new instrument in the company's line of Vapotester units to read concentration of combustible gases in tanks and enclosed spaces. It is designed particularly for use with "leaded" gasoline since it is not affected by tetra-ethyl lead. It will accurately register light concentrations of vapors in a tank after it has been steamed and ventilated.

Operation is on the Wheatstone bridge principle in which two of the bridge legs are identical filaments. The analyzing filament is exposed to the gas or vapor sample which is drawn in by operating the bulb on the housing side.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 3121 if you write the maker ▼

Your Materials Move FASTER, MORE ECONOMICALLY
in Strong, Lightweight Containers!

You save vital materials handling hours and dollars when you use boxes, barrels, cans, and other handling equipment made from Diamond Vulcanized Fibre.

HERE'S WHY: Diamond Vulcanized Fibre weighs only ½ as much as aluminum—yet has plenty of strength and toughness for long, hard use!

Thus, your workers can handle more goods faster, and with far less fatigue. Further, Diamond Vulcanized Fibre will not crack, splinter, or shatter. It is non-corrosive . . . oil and grease proof.

For faster, easier, *more economical* handling within your plant, put these durable, lightweight containers to work, now. Drop us a line for descriptive Catalog HW-46.

C-D DIAMOND FIBRE RECEPTACLES
CONTINENTAL-DIAMOND FIBRE CO. NEWARK 21, DEL.

▼ BREVITY—Identify by IEN - 3122 if you write the maker ▼

OTC ANNOUNCES
SENSATIONAL POWER-TWIN HYDRAULIC PULLER
WITH CENTER HOLE
REVOLUTIONARY ADDITION TO THE FAMOUS OTC PULLING SYSTEM

- Fits all OTC pulling units
- Works in any position
- Pushes—Pulls
- Faster than screw operation
- Eliminates torque
- More powerful—No friction
- Easier—Just pump strokes
- Safer—remote control

CENTER HOLE permits Power-Twin to do jobs no other hydraulic ram can do . . . makes possible application of direct force . . . fast, easy, unlimited adjustment . . . versatile interchange of parts.

LIGHT — COMPACT — POWERFUL — SAFE

The fastest, easiest working, handiest Push-Puller in history . . . sensational in performance, its time and labor saving ability and low cost make it a must for any shop. See your jobber for complete information or write us.

Spline shaft bearing comes off quickly with Power-Twin and OTC Push-Puller and 952 attachment.

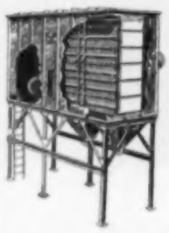
No problem to remove drive gear with OTC Power-Twin and 100% Grip-O-Matic.

OWATONNA TOOL COMPANY
371 CEDAR STREET • OWATONNA, MINNESOTA

▼ BREVITY—Identify by IEN - 3123 if you write the maker ▼

* At the Kellogg Company of Battle Creek, Mich., this Pangborn Dust Control system salvages 35 tons of valuable dust per day. Collected from the corn mill and the Gro-Pup building, the dust is valued at $40 a ton . . . building a profit of *$1400 a day* for Kellogg!

Here's how Pangborn makes Dust Control profitable for industry!



Pangborn Dust Collectors make low-cost dust control possible. As this cutaway shows, type "CH" Collectors are compact, offer maximum filtering area in a given size. Filter life is prolonged because dust-laden air passes through collector at low velocity. Efficiency is extremely high; in fact, clean exhausted air can often be returned direct to plant.

FIND OUT how Pangborn Dust Control *turns dust into profits.* Write for Bulletin 909A to: PANGBORN CORPORATION, 2300 Pangborn Blvd., Hagerstown, Md.

Look to Pangborn for the Latest Developments in Dust Control and Blast Cleaning Equipment

STOP THE DUST HOG from stealing profits with
Pangborn DUST CONTROL

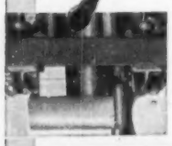
BREVITY—Identify by IEN - 3125 if you write the maker

SEE WHAT YOU'RE DOING!

Kalamazoo

METAL CUTTING BAND SAW

KALAMAZOO MODELS — 816-S — 824-S (COOLANT EQUIPMENT AVAILABLE)

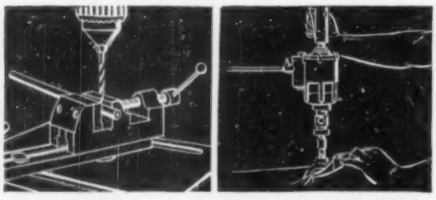


Only Kalamazoo gives you "full view" cutting action! Operator looks directly down into cut . . . for a constant check on cut-off accuracy. This is one of many exclusive Kalamazoo features for fast, accurate, low-cost cutting of angle iron, tubes, bars, pipe. Sturdy, rugged, portable. 4 Timken bearings! 30 second blade changes. No burr, minimum kerf. Write today for full details on the Kalamazoo.

MACHINE TOOL DIV. Kalamazoo TANK and SILO CO.

137 MARRISON STREET • KALAMAZOO 16, MICHIGAN

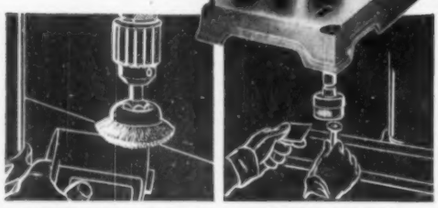
BREVITY—Identify by IEN - 3126 if you write the maker



FOR DRILLING FOR PRECISION HIGH-SPEED TAPPING

DRILLING is only one of many jobs you can do with a WALKER-TURNER DRILL PRESS

In Walker-Turner machines you get not only great versatility, but higher operating efficiency and longer life.



FOR REMOVING RUST AND SCALE FOR ABRASIVE POLISHING

WALKER-TURNER • DIVISION • KEARNEY AND TRECKER CORPORATION PLAINFIELD, N. J.

SOLD ONLY THROUGH AUTHORIZED DEALERS

DRILL PRESSES • JOINTERS • TABLE SAWS • BAND SAWS • BELT and DISC SURFACERS • JIG SAWS • RADIAL SAWS • LATHES • TILTING ARBOR SAWS

WALKER-TURNER DIVISION
Kearney & Trecker Corp., Dept. IE2, Plainfield, N. J.
Please send me a copy of the complete Walker-Turner Catalog.

Name .....
Firm .....
Address .....
City ..... Zone ..... State .....

BREVITY—Identify by IEN - 3128 if you write the maker

FLOORS . . Creosoted panels assemble in multiple for grade crossing

Source: KOPPERS CO.
2047 Koppers Bldg., Pittsburgh 19, Pa.

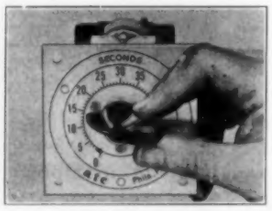
New design of the company's prefabricated hardwood panels for grade crossings employs 2, 3 or 4 hardwood timbers pressure creosoted and assembled with steel spiral drive-dowels or machine bolts into panels measuring 8 ft. in length. These panels are installed in multiple in an arrangement that permits removal and replacement without damage when track repair becomes necessary.

Two types include a solid design which rests directly on the ties and is made in panel height to meet a given rail height. The second design rests on raised blocks and measures 5½ in. in panel height with the additional rail height being taken up by the blocks. In the illustration is a crossing measuring 100 ft. in length made up of 105 panels and 42 flangeway fillers. It employs 15,000 board feet of lumber.

BREVITY—Identify by IEN - 3129 if you write the maker

TIMING . . Interval unit opens circuit following set interval

Source: AUTOMATIC TEMPERATURE CONTROL CO.
5212 Pulaski Ave., Philadelphia 44, Pa.



Type J-3 is a new manual pre-set timer for operation on 110 or 220-volt, 25 to 60-cycle ac. It is available in 12 overall intervals minimum at 0 to 15 seconds, maximum at 0 to 24 hours. Its load switch rates 20 amp. on 110-volt, 60-cycle ac. Application is on equipment such as ovens, battery chargers.

An interval is set by turning the knob on the face of the housing and then releasing it. This starts a synchronous motor, the pointer moving back toward zero. At this point the snap-acting switch is tripped and the timer shuts off.

BREVITY—Identify by IEN - 3130 if you write the maker

MANAGEMENT . . Production management practice in Los Angeles area summarized in results of survey

University of California, Bur. of Business Research
405 Hilgard Ave., Los Angeles 24, Calif.

Survey taken among industrial firms in the Los Angeles area is reported in new 24-page "Production Management Survey". It concerns current practice in industrial engineering, compares this practice to a similar survey among companies in the East and Midwest. Results are analyzed.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 3131 if you write the maker

BREVITY—Identify by IEN - 3132 if you write the maker

instrumentality with six memories

Now—the Multipoint Capacilog, a direct deflection type strip chart recorder giving up to six variable recordings on one chart has been added to the Wheelco Capacilog line.

Easy to Read—Easy to Operate—Easy to Service. Has all the latest features of Wheelco Instrumentality.

Write for Bulletin MPC-1. It gives complete details on the Multipoint Capacilog.

WHEELCO INSTRUMENTS COMPANY
845 W. Harrison Street, Chicago 7, Illinois

wheelco electronic controls

BREVITY—Identify by IEN - 3133 if you write the maker

Use Raybestos-Manhattan packings and gaskets for the valves in your plant, whether they're for oil, water, steam, sewage, chemicals, or any other gas or fluid. R/M manufactures a complete line of packings not only for valves, but for practically every type of industrial equipment. Your R/M distributor will be glad to help you select the right packing. Or write for the new R/M packing catalog today.

R M PACKINGS

RAYBESTOS-MANHATTAN, INC.
PACKING DIVISION, MANHEIM, PA.
FACTORIES: Bridgeport, Conn. Manheim, Pa. No. Charleston, S.C. Passaic, N.J.

RAYBESTOS-MANHATTAN, INC., Manufacturers of Packings • Asbestos Textiles • Mechanical Rubber Products • Abrasive and Diamond Wheels Rubber Covered Equipment • Brake Linings • Brake Blocks • Clutch Facings Fan Belts • Radiator Hose • Powdered Metal Products • Bowling Balls

BREVITY—Identify by IEN - 3135 if you write the maker

time is our greatest ally!

Let's save it on the assembly line

—beginning now!

As industry gears for defense, *time* is a most precious ingredient. Time to redesign, to retool and, finally, to produce.

Fasteners, as always, will play an important part in forging America's mailed fist. And the fasteners specified on blueprints today will determine whether production hours are saved, or wasted, in the future.

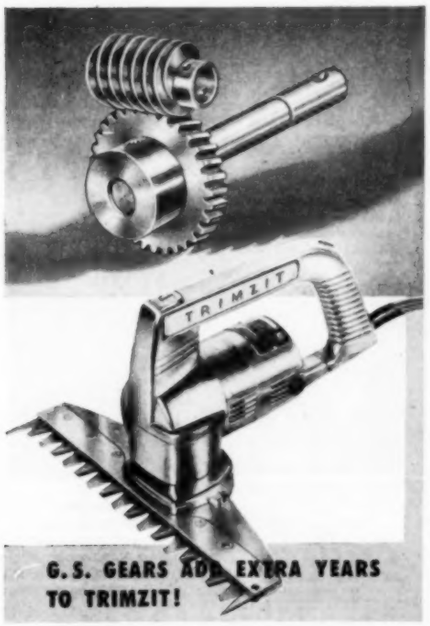
Careful selection of the most efficient fastener for each holding job can save these hours . . . can speed assembly and eliminate time-wasting fumbling. It is important, also, to consider design, tolerances as well as raw material, heat-treatment and finishes when making a fastener selection.

We at Lamson & Sessions will be happy to consult with you on any fastener problem—and recommend the most efficient one for the particular job at hand.

The home of "quality controlled" fasteners — Lamson & Sessions

The LAMSON & SESSIONS Co. . General Offices: 1971 West 85th Street • Cleveland 2, Ohio
Plants at Cleveland and Kent, Ohio • Birmingham • Chicago

BREVITY—Identify by IEN - 3136 if you write the maker



G.S. GEARS ADD EXTRA YEARS TO TRIMZIT!

LONG LIFE is one of the finer features of TRIMZIT . . the Electric Sprayit Company's Hedge and Lawn Trimmer. Foremost among the precision parts responsible for the remarkable durability and smooth efficiency of this excellent Trimmer is *G.S. Fractional Horsepower Gearing!* Like so many of America's most particular buyers, the Electric Sprayit Company specifies "G.S." for *better* Small Gearing. You, too, can expect *better*, more uniform Gears, economically produced to the most exacting specifications, when you send the job to G.S. Write today for suggestions and estimates on your needs. There's no obligation.

SEND FOR FREE NEW

6-page folder which illustrates and describes G.S. facilities, Small Gearing, and applications —with handy Charts . . for those who specify Gearing from 12 to 96 D.P. and finer. Ask for it on company stationery, please.

FRACTIONAL HORSEPOWER GEARING

GEAR Specialties, Inc.

MEMBER OF

Spurs • Spirals • Helicals • Bevels • Internals • Worm Gearing • Racks • Thread Grinding

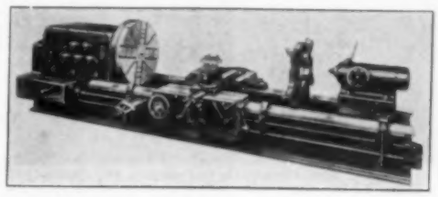
2635 WEST MEDILL AVE., CHICAGO 47, ILL.

WORLD'S LARGEST EXCLUSIVE MANUFACTURERS OF FRACTIONAL HORSEPOWER GEARING

BREVITY—Identify by IEN - 3138 if you write the maker

LATHE . . Heavy duty engine design swings 40 in., driven by 40 hp. motor

Source: NILES TOOL WORKS CO.
50 N. 3rd St., Hamilton, Ohio



Illustrated is the 40-in. size in a new line of heavy-duty engine lathes with swing capacity to 80 in., gear-selected speeds suitable for heavy slow cutting to operation with carbide tools, a total for 56 changes for speeds and feeds, an apron-mounted motor drive for rapid carriage traverse, motor-driven pump lubrication for headstock and carriage with separate lubricating equipment at the gear box and tailstock.

The spindle is mounted in anti-friction bearings. The other shafts in the headstock are also. The belt-connected drive is by a constant-speed ac. motor or a dc. motor with a 3 to 1 speed ratio. The motor mounts on the floor back of the machine. Controls at the carriage start and stop the motor, set rotating direction of the spindle and traverse the carriage. There is a rheostat control also when the main motor is dc. Pump motors are controlled by headstock pushbuttons. Additional buttons provide for jogging to assist in gear changing.

The carriage rides a compensating V-way at the front of the bed and is equipped with adjustable tapered gibs and with clamps under the bedways. It mounts an English-type tool block, provides power and hand feeds in longitudinal, cross and angular directions. A toothed clutch engages and disengages the feeds. The tailstock mounts a 6½-in. spindle with a 12-in. travel. A handcrank moves the tailstock on the bed. Two binders supplemented by bracing action of the pawl engaging the cast rack on the bed prevent slipping.

BREVITY—Identify by IEN - 3139 if you write the maker

CLEANING . . Steam spray machine connects to shop source for pressure

Source: LIVINGSTONE ENGINEERING CO.
102 Grove St., Worcester 5, Mass.

Speedy-Jet trade names a new unit in the company's line of steam-spray cleaning machines. The new unit provides for connection to a shop source for high-pressure steam and omits the electrically-heated boiler employed in the unit previously described IEN-11667-50. It includes a high-pressure detergent tank on a two-wheel hand truck equipped with 10-in. rubber tired wheels, a 25-ft. length of high-pressure steam hose for connection to the steam source and 25-ft. each of steam and detergent hose to reach from the tank.

The detergent tank is insulated and enclosed in an enameled metal housing. Steam admitted to the top of the tank places the detergent under pressure so it flows from the tank through the detergent hose to the lance.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3140 if you write the maker

NEW

AUTOMATIC SAFETY FEATURE

LINEMASTER

"LEKTRO-LOK" FOOT SWITCH

If you need a foot switch that's small, sensitive, safe, choose Lektro-Lok. Mechanical interlock allows only one circuit to function at a time. Operates on teeter-totter principle with selective circuits—yet single cord receptacle cuts costly harness assemblies.

Lektro-Lok weighs only 10 oz. Made to take it—rugged stamped metal case. It's the new, modern, *safe* foot switch from Linemaster, the Leader!

Only $5.25 (less in quantities)

Let us quote on your special problems

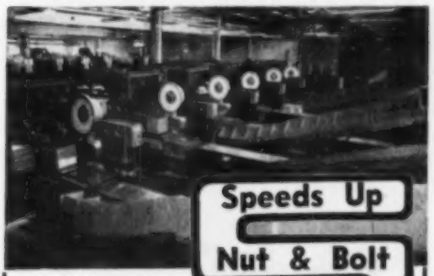
LINEMASTER *the leader*

Write today for folder and price list.

SIMONDS MACHINE CO., INC.
50 SAXON ROAD • SOUTHBRIDGE, MASS.

NEW • NEW • NEW • NEW • NEW

BREVITY—Identify by IEN - 3141 if you write the maker



Speeds Up Nut & Bolt Packaging

Six F-22 Feeders, each equipped with dual rate control, feed nuts and bolts into cartons at rapid rate to near full, then at slower rate to exact weight.

SYNTRON

"Vibra-Flow"

VIBRATORY FEEDERS

with Variable Control of Rate of Flow

WILL HANDLE most all types of bulk materials — fine, abrasive, lumpy, hot, cold, dry, damp. AT variably controlled rates from pounds to hundreds of tons per hour. TO mixers, blenders, ovens, crushers, packaging and bagging machines, belts, etc. WITH very low maintenance costs due to absence of wearing parts.

Write to—

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

BREVITY—Identify by IEN - 3142 if you write the maker

Well-Known Maker of Electric Hand Saws CUTS COSTS!

With ZIP-GRIP* Self-Locking SET SCREWS

***Send for FREE DEMONSTRATOR and DATA Sheet**—that tells why ZIP-GRIP* is successfully solving the puzzling set screw problems of this and over a hundred other products.*

The manufacturer of this hand saw found that other screws were too slow, or expensive to assemble and did not give a tight enough fit. ZIP-GRIP* solved the problem and also resulted in a reduction in cost. Write today and we'll tell you how to get Free Engineering Test Samples for your application, without cost or obligation on your part.

*PAT. PENDING

Makers of SETKO SET SCREWS

Set Screw & Mfg. Co.
5 Main St. Bartlett, Ill. (Chicago suburb)

We specialize in Solving Puzzling Set Screw Problems.

BREVITY—Identify by IEN - 3143 if you write the maker

ARO DOES IT AGAIN!

with AIRCRAFT DRILLS

6 models 500 to 17,000 R.P.M.

ANOTHER ARO FIRST!

1 **NEW SAFETY-LOCK TRIGGER** prevents tool starting up during drill bit changing.

2 **COMPLETE INTERCHANGEABILITY** of all parts . . . easy conversion from one model to another.

3 **SLO-SPEED, HI-TORQUE MODELS** for drilling high-tensile-strength modern metal alloys, armor plate, stainless steel. Also 5 Hi-Speed models.

EXCLUSIVE Safety-Lock Trigger!

Write for catalog.
The Aro Equipment Corporation, Bryan, Ohio
Aro Equipment of Canada Ltd., Toronto

ARO AIR TOOLS Also...
LUBRICATING EQUIPMENT...HYDRAULIC EQUIPMENT ...AIRCRAFT PRODUCTS...GREASE FITTINGS

BREVITY—Identify by IEN - 3144 if you write the maker

When You Use Masoneilan Regulators

You'll find thousands of Masoneilan Regulators in hundreds of plants giving accurate pressure reducing service in various types of application.

It stops "singing" and splashing from fixtures without cutting down flow . . . reduces strain on plumbing. Body Ratings: 150 psi . . . Reduced Pressure Ranges: sizes ¼" to 1" — 10-60 psi; sizes 1¼" to 2" — 10-40; 30-60 psi; size 2" — 15-40; 30-60 psi.

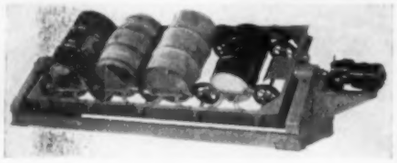
Also available for air service in sizes from ¼" to 1".

Your local Mason-Neilan industrial distributor is ready to serve you from his stock

MASON-NEILAN REGULATOR COMPANY
1188 ADAMS STREET, BOSTON 24, MASS., U. S. A.

BREVITY—Identify by IEN - 3145 if you write the maker

MULTIPLE INSIDE DRUM CLEANER



Features

Cleans 4 drum interiors at once.

Drums are both rolled and rocked on rubber-tired wheels.

Made to accomodate 30 & 55 gallon or 55 & 110 gallon drums.

Possible to insert and remove drums without stopping machine.

Use of our Case Hardened Steel Drum Cleaning Chain shortens cleaning time.

THE VOL-U-METER COMPANY
Buffalo 16, N. Y.

BREVITY—Identify by IEN - 3146 if you write the maker

power modernization

...for increased industrial efficiency

requires correct production speed

STERLING
SLO-SPEED

...GIVES YOU THE ONE BEST SLOW SPEED AND gives uninterrupted service — provides versatile mounting and flexibility in arrangement of machinery — is rugged — saves valuable space — provides greater safety — costs less to install and use. An indispensable source of slow speed power for:

Agitators	Dryers	Presses
Blenders	Feeders	Pumps
Blowers	Kilns	Screens
Conveyors	Mills	Tumblers
Cookers	Mixers	Etc., etc., etc.

Ask for your copy of pictorial bulletin No. F-62 showing Sterling Electric Power Drives Turning The Wheels of Industry.

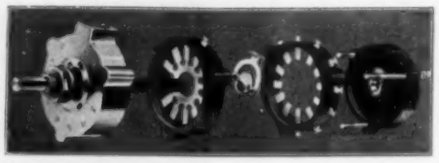
STERLING ELECTRIC MOTORS

Plants: New York 51, N. Y.; Los Angeles 22, California, Hamilton, Canada; Santiago, Chile. Offices and distributors in all principal cities.

BREVITY—Identify by IEN - 3147 if you write the maker

SWITCH . . Rotary selector unit for instrument circuits, 12 positions

Source: LEEDS & NORTHRUP CO.
4934 Stenton Ave., Philadelphia 44, Pa.



Type 31-3 is a new rotary selector switch of shorting design in which the brush makes contact with the next segment before leaving the one on which it has been resting. Various combinations are available from the single-pole assembly shown in the illustration of disassembled unit to six poles obtained by adding pairs of contact rings and brushes. In each there are twelve switching positions around the circle.

Silver contacts are employed in the enclosed assembly. Zero resistance through the switch is .001 ohm. Resistance change is less than .0005 ohm on life test to ten-million operations.

BREVITY—Identify by IEN - 3148 if you write the maker

CONTROL . . Temperature regulator governs power to electric elements

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Ask for Bulletin GEA-3301-B

Reactrol System designates assembly of three control devices to regulate temperature in electric furnaces, superheaters, air heaters and other electrically-heated equipment. These devices include a standard temperature-control instrument, such as the Leeds & Northrup Micromax, a saturable core reactor and the new panel unit. The equipment regulates power supplied to electric heating elements for proportional temperature control. It prevents voltage feedback from the elements.

Any change in furnace temperature causes the temperature-control instrument to move slightly and thus change voltage across the control potentiometer in the instrument. This voltage is fed into an amplifying tube on the panel. The amplified voltage, in turn, controls the grid of a thyratron tube which rectifies alternating current and controls resulting direct current to the saturable core reactor. A phanatron is used to obtain full wave rectification.

BREVITY—Identify by IEN - 3149 if you write the maker

LIGHTING . . Condensed specifications on fixtures made by Institute members in bulletin

RLM Standards Institute
326-28 W. Madison St., Chicago 6, Ill.

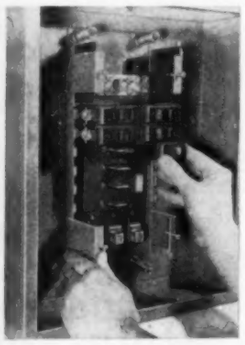
Fluorescent and incandescent lighting fixtures made by Institute members are grouped by standard specification numbers in new 4-page Bulletin 1050. The groups are arranged in chart form so you can see which type of fixture is certified by the Institute and which are being tested.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 3150 if you write the maker

NEW CLASS I PANELBOARD

IS *FIRST* WITH PLUG-IN BREAKER



Trumbull's new line of NLTQ Panelboards introduces the first *plug-in* circuit breaker with quick-make, quick-break. Also: thermal-magnetic protected; physically interchangeable breakers.

OTHER NEW FEATURES

Interior — spring-mounted, self-aligning.
Molded-in-plastisol busbar and stab assembly.
Sequence phasing — in all sizes

Write for Bulletin TEB-14, THE TRUMBULL ELECTRIC MANUFACTURING COMPANY, Plainville, Conn.

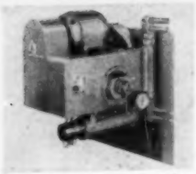
TRUMBULL ELECTRIC

BREVITY—Identify by IEN - 3151 if you write the maker

Fire low-cost HEAVY OILS with COMPLETE dependability

IRON FIREMAN
Rotary OIL BURNER
makes steady, uniform flame with No. 6 oil or lighter

Fires heat-rich Nos. 5 and 6 oils (or lighter) with a steady, uniform flame at varying oil temperatures. Oil feed rate stays within ½ of 1% of setting, even when throttled down to 20% of capacity. The secret? It's Iron Fireman's Oil Volameter which meters the oil by *volume*, rather than by tricky ports and valves. America's most advanced industrial oil burner.



Iron Fireman Commercial Oil Burner for Smaller Industrial Applications

An outstanding, highly efficient oil burner for smaller commercial and industrial use. Fires No. 2 oil or lighter; capacity 5 to 20 gals. per hour. Precise control of fuel and air gives superior performance and economy.

Write for illustrated folders TODAY

IRON FIREMAN
3166 WEST 106TH STREET CLEVELAND 11, OHIO

BREVITY—Identify by IEN - 3152 if you write the maker

PERMACEL News Graphic

CUTTING COSTS...SPEEDING PRODUCTION WITH INDUSTRIAL TAPES

PAN AMERICAN WORLD AIRWAYS SYSTEM speeds maintenance with **PERMACEL** Tapes. **PERMACEL-77** protects air scoop and propeller shaft. **PERMACEL-66** protects fuel and hydraulic lines.

WATERPROOFING AND WEATHERPROOFING jobs on Silver Fleet trucks call for **PERMACEL-68**, a flexible, plastic-coated cloth tape with high tensile strength, extremely good adhesion. Meets Government standards.

FREE! HELPFUL BOOK— Write today for 12-page book packed with ideas on how you can cut costs, speed production with Industrial Tapes. Dept. 6M.

INDUSTRIAL TAPE CORP., NEW BRUNSWICK, N. J.

NAME ..... (PLEASE PRINT)
TITLE .....
COMPANY .....
ADDRESS .....
CITY ..... STATE 5M

Permacel INDUSTRIAL TAPES

INDUSTRIAL TAPE CORPORATION, NEW BRUNSWICK, N. J.
makers of ®TEXCEL Cellophane Tape, and a complete line of pressure-sensitive tapes for industry.

BREVITY—Identify by IEN - 3154 if you write the maker

3762 WEST BELMONT AVENUE • CHICAGO 18, ILLINOIS

BREVITY—Identify by IEN - 3155 if you write the maker

is a high rate of speed . . . and 720 MARKS PER HOUR* on delicate and precisioned parts is a high rate, too. But not for Matthews' "AIRGRIT" Marking Machine. One user of "AIRGRIT", a producer of electronic equipment, is marking fragile parts in ¼ second . . . Imagine those production rates, then investigate "AIRGRIT" today.

"AIRGRIT" is marking

METAL
CERAMIC
FIBRE
GLASS
PLASTIC

Send for Literature . . . . . Bulletin B-1

JAS. H. MATTHEWS & CO.
3948 FORBES ST., PITTSBURGH 13, PA.
NEW YORK BOSTON PHILADELPHIA CHICAGO
NEWARK SYRACUSE CLEVELAND CINCINNATI
DALLAS BIRMINGHAM LOS ANGELES

"I WISH I HAD"

(Continued from page 112)

NEW PRODUCT . . "I wish we had contact with individuals or manufacturing companies from whom we could take over manufacture and sale of one or two relatively small products for bench work in our Erie, Pa., plant." **IEN W-20**

PURCHASING . . "I wish we had contact with individuals who can fill seven existing vacancies in the Department of Purchase at the New York City Housing Authority at salaries of $4,400 per year. Applications on request." **IEN W-21**

RUBBER . . "I wish we had a buyer for about 100 ft. each of ¼, ⅜ and ½-in. chemically-blown black sponge rubber, both natural and neoprene, in 36-in. width. The stock is fresh and is held in Rockford, Ill." **IEN W-22**

STOKERS . . "I wish we had a buyer for two Flynn & Emrich side-retort stokers with lateral moving grates, continuous ash discharge, electric-hydraulic drive, to burn rice coal on grate surfaces measuring 4 by 5½ feet. They cost $5,000 new in 1948 and are in excellent condition in storage in Philadelphia. They are Series 40-A-9G." **IEN W-23**

THREADING . . "I wish we had a buyer for a quantity of chasers to use with a 1½-K Geometric die head. Sizes range from 7/16 to 1⅝ in. with National Standard thread pitches. Minimum number of sets is 26 for 1⅝ inch. Maximum number is 62 for 1⅛ inch. All are new. Philadelphia." **IEN W-24**

WIRE . . "I wish we had contact with a source of supply for surplus wire suitable for cold working, cold heading and similar operations to supplement our regular supply sources. We are interested in C1008 bright basic steel wire, copper, aluminum, stainless steel and other suitable type. Our plant is in Wisconsin." **IEN W-25**

CRANE . . "I wish we had a buyer for a 1-ton Manning, Maxwell & Moore Type-SSJ rotating jib crane with a 13-ft. boom revolving through a complete circle. Height under the boom is 10 feet. The crane is in Warren, Ohio." **IEN W-26**

BREVITY—Identify by IEN - 3157 if you write the maker

CLEANING . . Plastic hand scraper to remove oil and grease from hands

Source: RELIABLE MACHINE WORKS
240-44 Eagle St., Brooklyn 22, N. Y.

Han-D-Wipe is a new device made of lucite for attachment to a machine or on a wall. It will remove grease and oil from a worker's hands and fingers when he draws them over the edge and through the finger openings. The material removed falls into a pocket formed in the housing of the unit for disposal or recovery. Overall dimensions are about 6 by 3 by 3¼ inches. Weight is 3 ounces. List price is $2.45, including two mounting brackets.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

BREVITY—Identify by IEN - 3158 if you write the maker

Now you can get accurate, pinpoint variable speed control with wide adjustability of speeds . . . plus good efficiency, high power factor and low maintenance — . . . when you use a Brown Boveri 3-phase variable speed motor. No belts, pulleys, gear boxes or converters are needed. Selected speed is maintained regardless of torque and voltage.

Speed ranges up to 1:50 — controlled either manually by push button or automatic devices. ½ hp to 500 hp types including fully enclosed, self-ventilated motors for hazardous operations.

MAIL COUPON FOR COMPLETE DATA!

Please send me data on your Variable Speed Motors.

Name ..... Title .....
Company .....
Address .....

BROWN BOVERI CORPORATION
19 Rector St. • New York 6, N. Y.

BREVITY—Identify by IEN - 3159 if you write the maker

Consult Your Local Distributor for Full Information

Yes, sir! a complete line in all diameters to meet every slitting and slotting requirement:

(1) ***Master-Cut***—a standard blade, for milling machine purposes generally.

(2) ***Triple-Chip***—a deluxe blade, for low cost operation and highest production *with accuracy.*

Dual Drive Adaptors optional on all M. & M. slitting and slotting blades. Dual Drive reduces stresses on driving means; makes possible blade interchangeability.

Also, special blades to order. Contact your local dealer or write us in Cleveland for full information.

Ask for Bulletin 250-Q.

THE MOTCH & MERRYWEATHER MACHINERY CO.
PENTON BUILDING • CLEVELAND 13, OHIO
COMMAND OUR UNPARALLELED EXPERIENCE IN CIRCULAR SAWING

BREVITY—Identify by IEN - 3160 if you write the maker

Wire Forms Finished
TO YOUR SPECIFICATIONS

● Now, Sommer is equipped to handle *your* wire forms—in a wide variety of attractive finishes.

We have installed fast, automatic nickel-plating equipment for either large or small assemblies. Also, if you want cadmium or zinc plating, bonderized enamel, parkerized or copper-coated finishes—you can count on Sommer.

Complete forming, stamping, cut-threading and butt-welding of light metal parts are also among our services. Whatever your problem, you can save time and money if Sommer handles the *complete* job. Just send sample, blueprint or drawing.

SOMMER METALCRAFT CORPORATION
(Formerly JESCHKE Wire and Specialty Company)
300 POSTON DRIVE
CRAWFORDSVILLE, INDIANA

BREVITY—Identify by IEN - 3161 if you write the maker

A steel hand hoist with compact, adjustable suspension and trolley

LONGER-LIFE FEATURES

- Steel in all load-supporting parts
- Load sheaves with five formed pockets
- Alloy Steel load chain
- Swiveling drop-forged load hook
- Alloy steel, machine cut gears
- Fully enclosed, self-oiling gearcase

Write for Bulletin DH-369

ACCO
York, Pa., Chicago, Denver, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, Portland, San Francisco, Bridgeport, Conn.

WRIGHT HOIST DIVISION
AMERICAN CHAIN & CABLE
In Business for Your Safety

BREVITY—Identify by IEN - 3162 if you write the maker

The economical, sure way—to avoid ROT and TERMITE damage!

Where steam and vapor from industrial processes are prevalent wood decay is accelerated—use Wolmanized lumber to avoid costly damage.

Wolmanized* *pressure-treated* Lumber assures *lasting* protection. High pressure (150 p.s.i.) drives the preservatives deeply into the wood. Volumetric absorption of the preservative solution is measured in gallons per cubic foot—not in feet of coated surface.

Millions of feet of Wolmanized pressure-treated Lumber have been in service under severest conditions, for years. Write for facts about Wolmanized Lumber. Or, ask for copy of "Service Records" of uses in scores of industries and applications.

American Lumber & Treating Co.
1641 McCormick Bldg., Chicago 4, Ill.

*Wolmanized is a registered trademark of American Lumber & Treating Co.

Wolmanized PRESSURE TREATED **Lumber**
Stops Rot and Termites

BREVITY—Identify by IEN - 3163 if you write the maker

PRENTISS

"BULL Dog"

MACHINISTS' VISES

Backed by 80 years of time proven acceptance by industry.

•

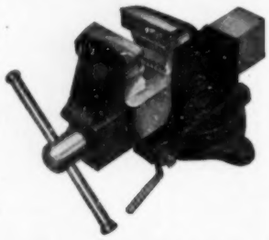
Hundreds of plants have used them and still do.

•

Insist on PRENTISS for that "EXTRA" vise service.

•

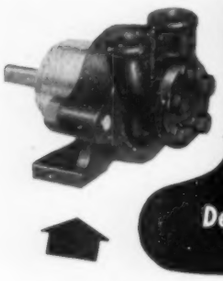
Your industrial Distributor can furnish.



Buy PRENTISS Today

PRENTISS VISE DIVISION
OF THE CHARLES PARKER CO. MERIDEN, CONN.

BREVITY—Identify by IEN - 3164 if you write the maker



Let TUTHILL PUMPS Help Solve Your Design Problems

• For Pressure Lubrication
• For Hydraulic Controls
• For Liquid Transfer

Wherever you need a compact pumping unit for present equipment or for projected design, it will pay you to get the facts on Tuthill small pumps for non-corrosive service. Model L, illustrated here, is a positive displacement internal gear rotary pump, noted for its mechanically-sealed, leak-free performance, quiet operation, low power consumption and long life. Capacities up to 5 g.p.m. and pressures to 400 p.s.i. Ring or foot mounting. Many porting arrangements. Write for Model L Bulletin.

TUTHILL PUMP COMPANY
939 East 95th Street, Chicago 19, Illinois

MARCH 1951

INDEX TO ALL PRODUCTS

How to find what you need:

Leaf through the issue with your current needs in mind, noting down those subjects that sound like solutions to your problems as you read the subject headings.

Next use this index to pick up page number references to additional sources on the subjects you have chosen. An asterisk (*) in the index after a number means editorial material.

Now take one subject at a time and refer to the pages you have noted. This time read the editorial descriptions and advertisements in detail. Then write the IEN numbers on which you want further information on your Reader Service Form to send to us, or write the manufacturer direct.

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BREVITY—Identify by IEN - 3165 if you write the maker

HOW TO GET "NO-BLINK" FLUORESCENT LIGHTING

Now, do away with the annoyance of flickering lamps — get comfortable "no-blink" lighting—by insisting on fixtures with Watch Dog* fluorescent starters.

Watch Dogs are the starters that turn off aging fluorescent lamps as soon as they begin to flicker—actually cut worn lamps out of the circuit. When blink begins, out pops the Watch Dog's red button, and the lamp is turned off. When the lamp is replaced, the maintenance man simply pushes the button, and the Watch Dog is ready to go again.

Thanks to their cut-out feature, Watch Dogs outlast ordinary starters as much as five to one—save ballasts—save tempers.

For "no-blink" lighting look for G-E Watch Dogs in the fixtures you buy. Section Q64-342, Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.

*Registered Trade Mark of General Electric Company

GENERAL ELECTRIC

BREVITY—Identify by IEN - 3166 if you write the maker

Fast, Safe PACKING FOR MILITARY MATERIEL

Now available for efficient, cost-saving packing of shells, cartridges, fuses and other military material, are American pre-assembled interlocking partitions made to meet government specifications.

Wire for prices on your requirements. Volume production facilities.

American PARTITION CORPORATION
3043 N. 30TH ST. UPTOWN 3-5100 MILWAUKEE 10, WIS.
Eastern Plant and Sales Office: Bound Brook, New Jersey
Bound Brook 9-3100
Western Representative: Seaman Hermes Co. — Zebrook 3-3244
Merchants Exchange Building, San Francisco 4, Calif.
Midwest Sales Representative:
762-73 Milwaukee Ave., Chicago 22, Ill. — Monroe 6-4762

BREVITY—Identify by IEN - 3167 if you write the maker

World's Most Widely Used
PORTABLE DIAL SCALE

This portable Toledo controls costs in a great variety of applications. Sturdily built to maintain precise weighing accuracy. Rapid automatic weight indication. Wide choice of dials. Capacities to 1600 lbs. Send for bulletin 2025. Toledo Scale Company, Toledo 1, Ohio.

Portable Scale for weighing at bench level heights. Shown with adjustable wheeled stand and with a packing house pan.

TOLEDO
HEADQUARTERS FOR SCALES

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MARCH 1951

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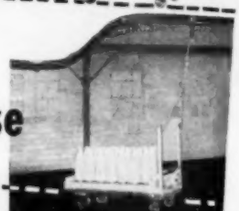

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(Please turn to page 109)

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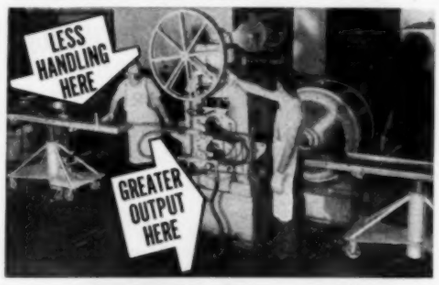

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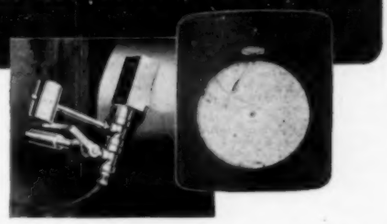

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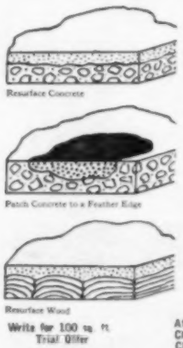

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